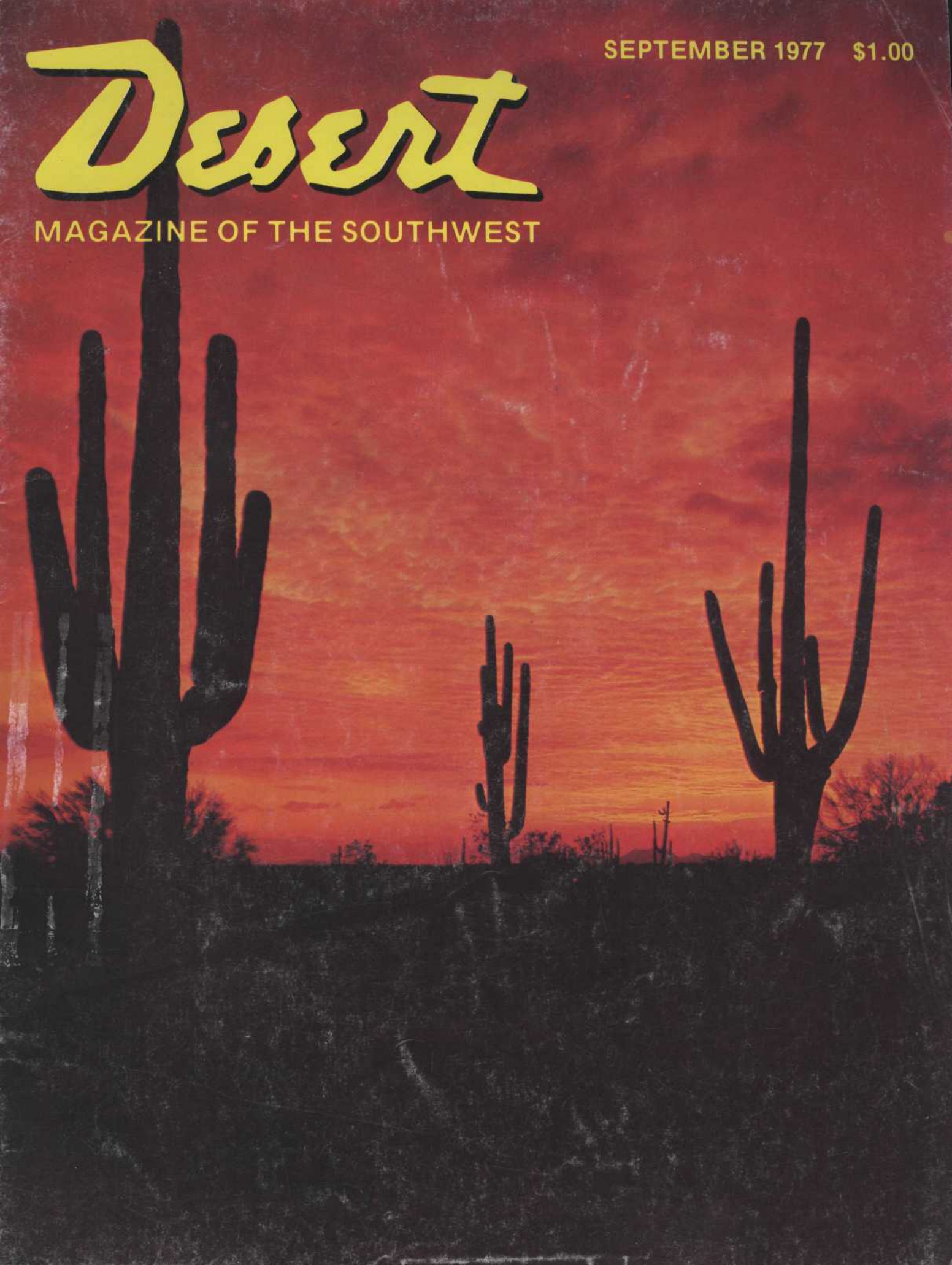


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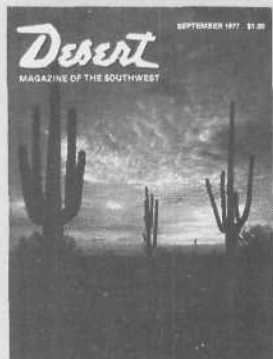
Volume 40, Number 9

SEPTEMBER 1977

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THE COVER:
Southern Arizona sky at sunset. In the Valley of the Sun, a painted sky, delicate tones and the statuesque Saguaros combine to make a brilliant ending for a desert day. Photo by Josef Muench, Santa Barbara, California.

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A Peek in the Publisher's Poke

LAST MONTH we featured the Road-runner in an article entitled, "Clown of the Desert." But this bird does not have the corner on the market. In this issue, our naturalist, K. L. Boynton, reveals the sneaky antics of a snake who plays dead. The Western Hognose is a clown of a crawler with a real twist—and it still presents a puzzle to biologists.

And speaking of puzzles, author Albert Millsbaugh gives us a full treatment on another Desert Clown which does an off-again, on-again disappearing act. And would you believe? it's a river!

And as for the disappearing act, Harold Weight continued his Picacho Lost Gold Legends with a fascinating tale of an arch that was "up-again, down-again." Who knows . . . ? And . . . following the theme of disappearing acts, Bob and Ana Cook try to retrace the long-gone Tonopah & Tidewater Railroad in a four-wheel-drive vehicle—with and without success. But—oh, they had fun!

For tennis lovers, a double fault is a no-no, but author Edward Anthony's treatment is a match point when he describes the Devil's Punchbowl which lies between the San Andreas Fault and the San Jacinto Fault. This is a beautiful area, just two hours drive from the Los Angeles Basin, but visited by few.

Betty Shannon takes us to Gold Mountain this month, as she wanders through the beautiful mining country of Nevada's Esmeralda County, and Dick Bloomquist continues his Palm Oases series with a visit to Mopah Spring in the mysterious Turtle Mountains of California.

Howard Neal explores Arizona's beautiful Mission San Xavier del Bac, and while we're in Arizona, Nancy Brandt brings us up to date on Maricopa County's Historic Sites Posse—certainly a worthwhile organization the like of which is needed in many other areas.

Topping off our issue this month is an article on "Patton Country," for which we have had so many requests from our readers. Bill Jennings' nostalgic look at General George S. Patton and the historic Desert Training Center he established early in World War II recalls a spirited but futile effort to establish a fitting memorial to the general and his armored corps gladiators that began 21 years ago.

Riverside County Supervisor Walter V. Pittman proposed a monument to be erected at the site of Camp Young some 30 miles east of Indio, California. A Sherman tank on a native-stone platform would be flanked by a tall obelisk of steel forged from iron mined at nearby Eagle Mountain. A 320-acre site was proposed by the Highway 60 Association, the American Legion and the Native Sons of the Golden West.

The plan was later modified to utilize the existing altars and huge outdoor relief map near the Iron Mountain Pumping Station on the Colorado River Aqueduct, 30 miles northeast of Desert Center. Here a state memorial park was proposed after a federal monument plan was rejected on the grounds there were too many such proposals at the time.

Actor Leo Carrillo, as the general, a fourth-generation Californian, added his support but the proposal never got off the ground. Perhaps today, with the renewed interest in the general, is the time to think about it again.

Mary Frances and Jerry Strong and Glenn and Martha Vargas are on vacation this month, enjoying a well-deserved rest.

William Kuykendall

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MINES OF THE SAN BERNARDINOS
By John W. Robinson

Nineteenth Century miners were an optimistic lot. They would go almost anywhere and dig tirelessly at the slightest hint that valuable minerals might be present. And they would do this year after year, for rewards that were hardly worth the effort. The prospector, the miner, the capitalist were motivated by the hope

that, just maybe, they would strike the bonanza to set them up for life. The dream of incredible wealth was fueled by the knowledge that, indeed, some did strike it rich. On the chance that they too might find a fortune in gold or silver, thousands of treasure hunters pox-marked the western landscape with ditches, shafts, tunnels and all manner of mining impliments. But only a handful of this horde ever saw their dreams come true.

Mining in California's San Bernardino Mountains followed this familiar pattern. Thousands of men, seeking their fortunes, were lured into the area by the quartz-rich hills lying north and east of Bear Valley. Countless man-hours were expended digging, drilling, washing, blasting and otherwise defacing nature's landscape. Holcomb Valley, Gold Mountain, Blackhawk Canyon and the Morongo county still bear the dimpled scars of this mining frenzy of years past.

In this volume, John tells of the many strikes that led to the opening of this high wooded area. It was in 1860 that "Uncle Billy" Holcomb wandered over a ridge to start the largest gold rush in the southern regions of the Golden State, a rush that is still celebrated by a festival each year at Big Bear. Here are stories of Uncle Billy, as well as the more recent ones such as Lucky Baldwin's, who built large gold mills at Doble, the remains of which are still to be seen above the shore of the lake that now bears his name.

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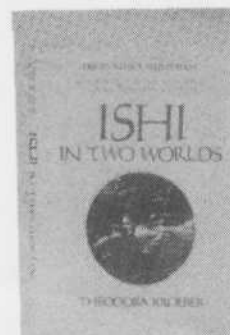
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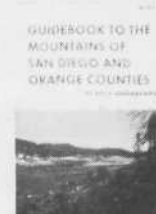
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PATTON COUNTRY

IS MEMORY has not dimmed for thousands of desert residents, yet the physical signs of General George S. Patton's World War II "invasion" of the Colorado and Mojave deserts are gradually fading away—as old soldiers are reputed to.

In January, 1942, the famed cavalryman and U.S. Olympics equestrian, one of the modern Army's first armor specialists, established the largest training center in the history of the nation's military forces—encompassing most of the arid parts of California south of Death Valley, from Las Vegas, Nevada, and Kingman, Arizona on the east to the escarpment of the San Bernardino, San Jacinto and Santa Rosa Mountains on the west.

Patton himself spent only a few months at Camp Young, as the headquarters nucleus itself was called, before leaving for North Africa and his textbook success against the Germans there, in Sicily and across France and Germany.

He died, just after the war ended in Europe, the result of a car-truck crash.

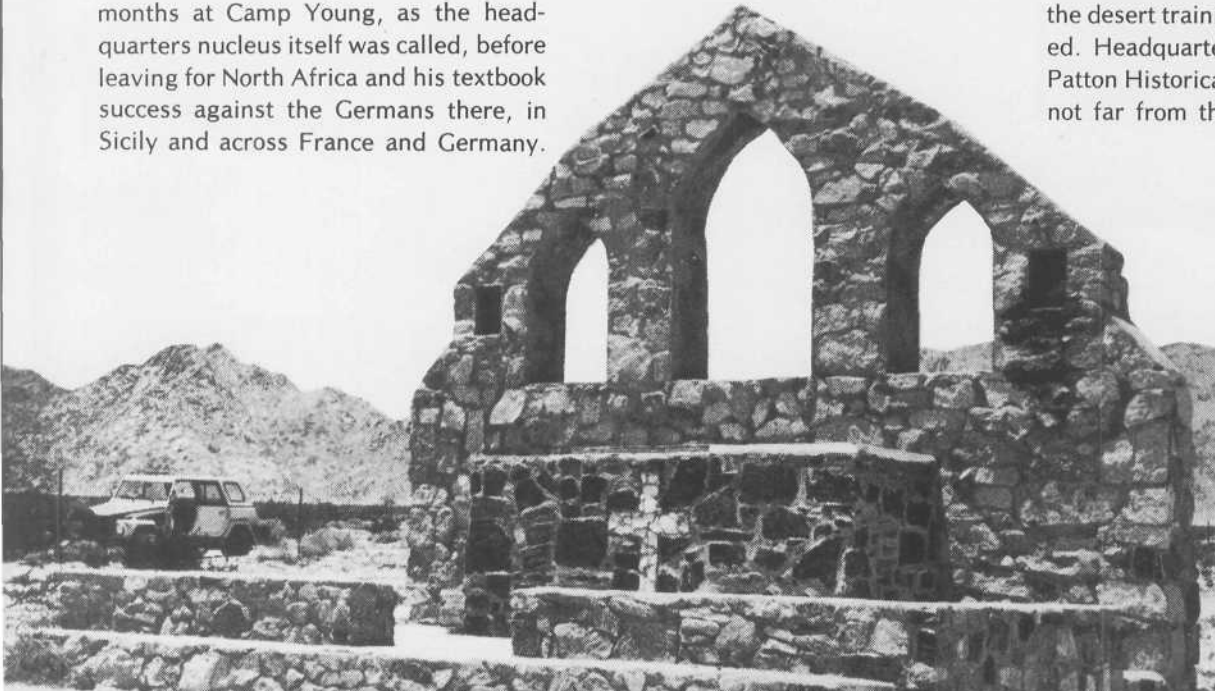
Patton came to the desert from Ft. Benning, Georgia, establishing his original headquarters at the old red-brick Hotel Indio. Advance units of his new First Armored Corps moved via troop train to Indio and Freda siding, 45 miles northwest of Blythe, initially in April, 1942.

The huge base, covering more than 16,000 square miles, expanded under succeeding commanders, becoming the Desert Training Center. The second major headquarters area was established near Freda. The late General Walton H. Walker formed the XX Corps after his mentor, Patton, departed. Known as the "Ghost Corps" by the Germans due to

his elusive attack and disappear tactics, Walker's force was second only to Patton in its exploits.

The Patton mystique has grown in recent years, particularly since the hit biographical movie starring George C. Scott. Patton was the grandson of Don Benito (Benjamin) Wilson, one of the first Anglo-Saxons to reach Spanish-Mexican California before the Gold Rush. The general was born at San Gabriel in 1885, graduated from West Point and was a mainstay of the U.S. Olympic team in 1912, although he did not win a medal. He fought in Mexico with Pershing and distinguished himself in France during World War I.

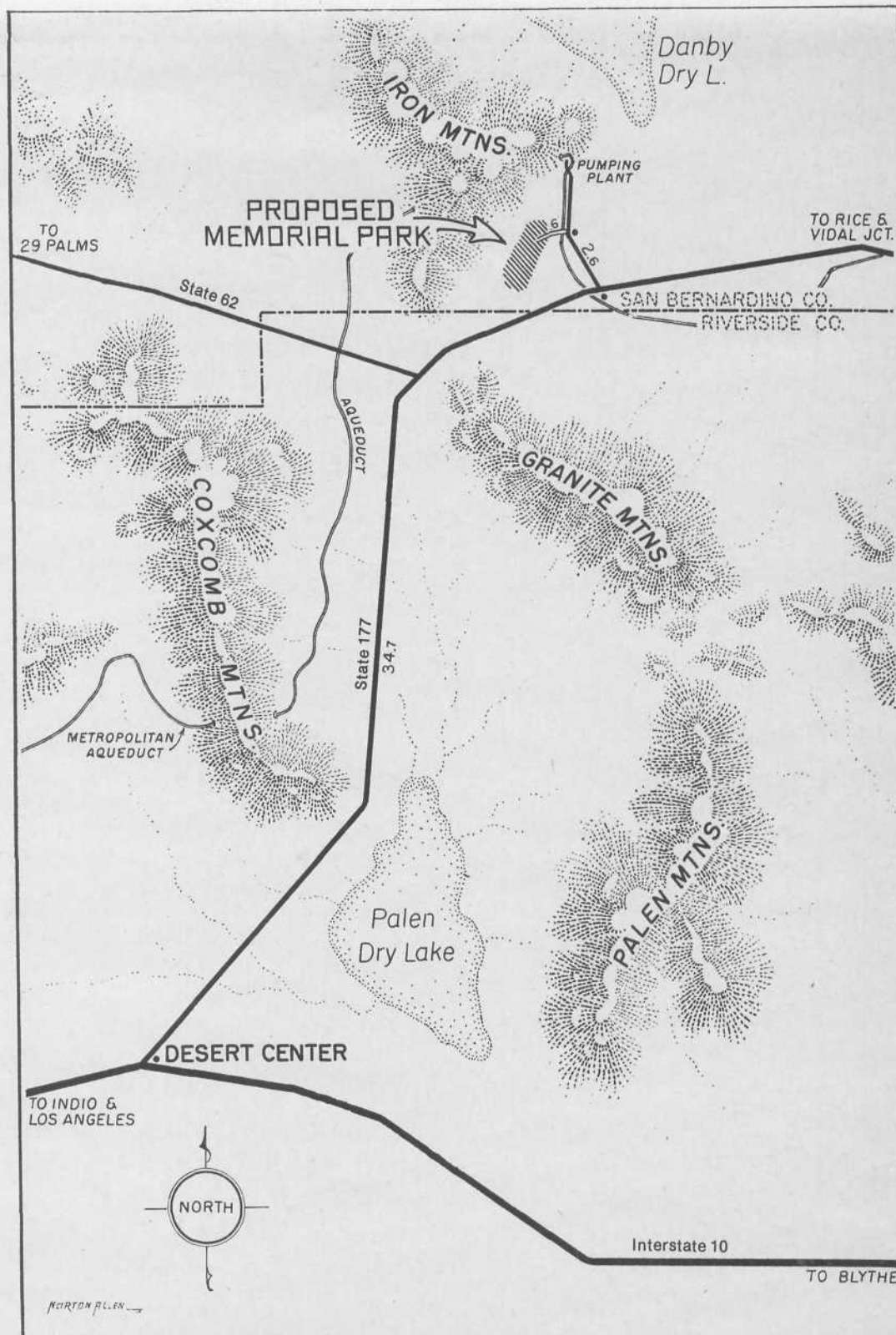
Such is the Patton legend today that a new commemorative group has recently formed to honor both the Californian and the desert training complex he established. Headquarters of the Camp Young-Patton Historical Society are in Whittier, not far from the general's birthplace.



Larger of the two altars at the almost-forgotten Iron Mountain training site for World War II tank and artillery gunners shows little effects of repeated flooding and rodent holes under its footings.

by BILL JENNINGS

This revised map is from the original 1957 article wherein a Desert Memorial Park was planned to honor all the men who trained in the desert in the early stages of World War II. This map covers but a small portion of the 16,000-square-mile Desert Training Center.



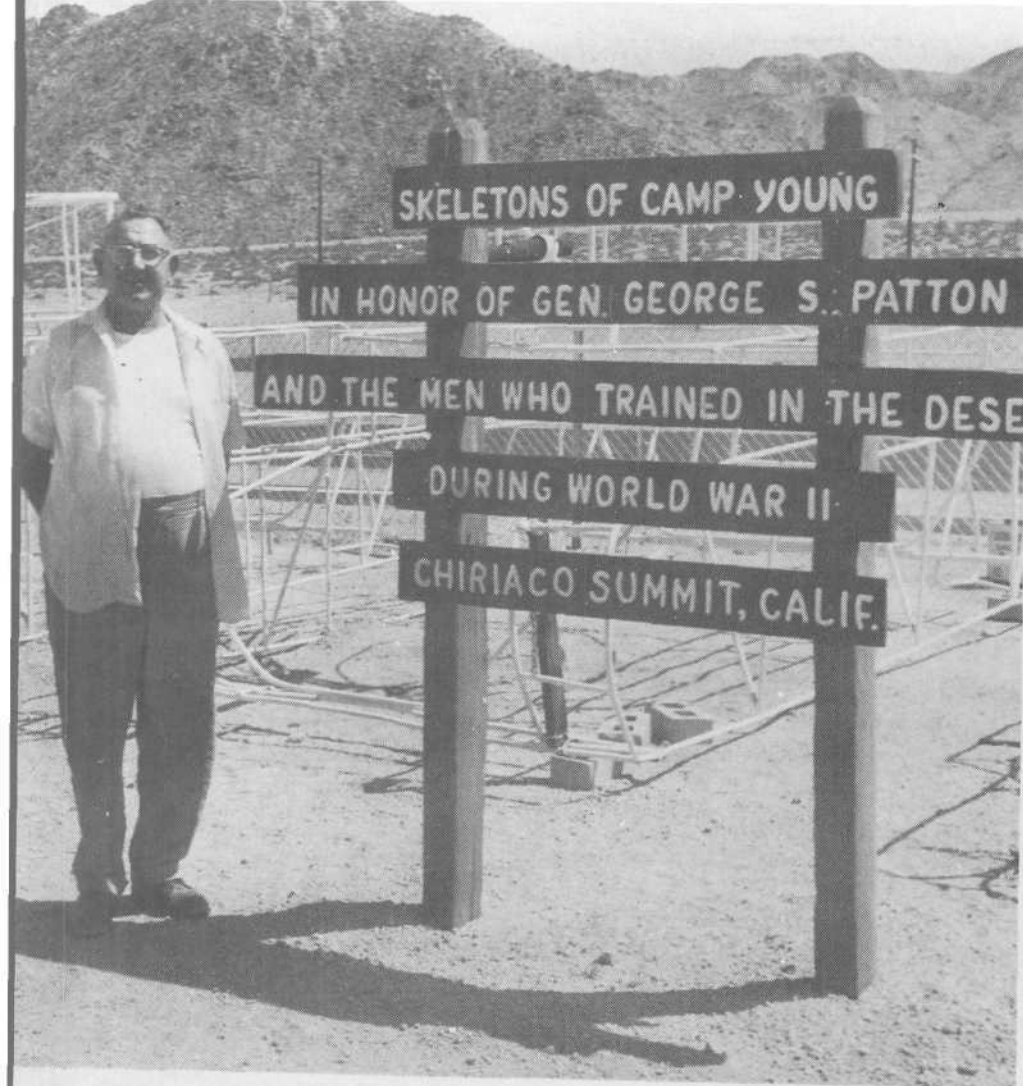
The mark he left behind is more symbolic than actual—many of the scars remaining in the perimeters of his maneuver area actually date to 1964, when the Army again used much of the Patton Country to stage Desert Strike, the largest desert training exercise since World War II. Most impact around Twentynine Palms is due to current Marine Corps training, and Naval aerial gunnery and rocketry have marked the

Chocolate Mountains northeast of Niland more than Patton ever did.

Because of the huge size of the Desert Training Center, nee Camp Young, this story will concentrate on only a small part of the region, a roughly rectangular area bounded on the west by the Coachella Valley, on the north by Metropolitan Water District's Colorado River Aqueduct, on the east by the river itself, and on the south by the Riverside-Imper-

ial counties boundary. Even that arbitrary division encompasses more than two million acres, most of it administered in 1977 by the U.S. Bureau of Land Management.

Patton's field headquarters were located a mile north of present-day Interstate 10, a half-mile east of the Cottonwood Springs Road which leads to Twentynine Palms through Joshua Tree National Monument. All that's left today



Joseph Chiriaco stands beside his own personal monument to the Patton legacy. These metal frames were covered with tank-shaped shrouds of canvas to simulate light tanks as targets for aerial bombs and machine guns. Chiriaco Summit, on Interstate 10 east of Indio, California, is near Patton's headquarters at Camp Young.

the dry lake or playa after wet winters, is just east of Chiriaco Summit, one of two freeway oases in the area that date to Patton's time. The other is the Ragsdale family's Desert Center, 19 miles to the east.

Joe Chiriaco has operated his auto and driver refreshment stop since 1933. He has his own memorial to Patton, whom he remembers somewhat fondly. Two white-painted metal frameworks near the front door are identified as "skeletons of Camp Young, in honor of General George S. Patton and the men who trained in the desert during World War II."

These were the frames of canvas-covered targets, in the shape of light tanks that were used by low-flying aircraft and tank gunners. They are among the few tangible remnants of those exciting days.

The mile-long Shavers Summit Airport east of Chiriaco's is now maintained by Riverside County but was one of several strips used by Patton's staff for speedy transportation to outlying training sites. Others are near Freda, Rice, Blythe and near Wiley Well to the southeast.

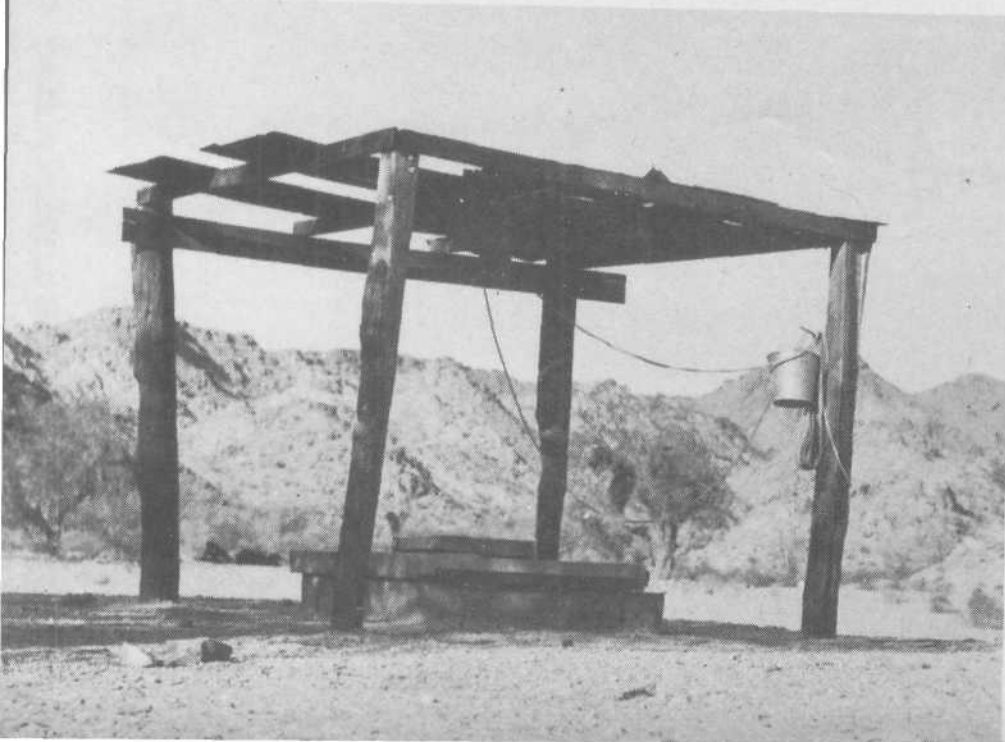
Most of the central area of Patton Country is classified for careful use under the BLM Desert Plan. You must stay on marked routes in the national monument to the northwest and in two "special-design" sectors that straddle or adjoin the old Desert Center-Rice Road. It is officially State Route 177-62 all the way from I-10 to Earp, on the Colorado River just west of Parker, Arizona.

There is one closed area, well-marked,

are several long lines of once white-painted rocks that bordered entrance and service roads. Several tons of coal are scattered around what once was the headquarters laundry and power house.

Eight miles to the east, along the Hay-

field aqueduct pumping station road north of I-10, a *Desert* reader recently found 51 World War II-vintage Army dogtags, perhaps dating to Patton days. Hayfield, which takes its name from the distinctive seasonal grass that grows on



Historic Beal's Well in the Chocolate Mountains, east of the Salton Sea, formerly was a traveler's lifesaver on the old Niland-Blythe road, now closed. Chocolates were heavily used by Patton's forces and even today by Naval aviators as a bombing, rocket and aerial gunnery range.

Lower of the two altars at the Desert Training Center headquarters camp near Iron Mountain shows the ravages of time, and is beginning to merge back into the desert alluvial fan from which it was formed in 1942. Site is protected by fencing and lack of directional signs. Site was used by tank-artillery trainees.



at the BLM's Desert Lily preserve, six miles northeast of Desert Center on State 177. Another restricted area surrounds Palen Dry Lake, which includes some private land, a zone of unexploded artillery and aerial bombs and shells, some charted archeological sites. You are urged to stick to existing trails, of which there are literally hundreds in Patton Country.

Ford Dry Lake, opposite the Corn Spring-Graham Pass offramp on I-10, 25 miles east of Desert Center, is the jumping off place for one of the few unre-

stricted travel areas under the BLM plan. You can drive north into the Palen Pass country or northeast across the McCoy Mountains to the Arlington Mine and the almost deserted company town of Midland, on the Santa Fe Railway's Rice-Blythe branch. Midland was abandoned when gypsum quarries in the Little Maria Mountains were closed a dozen years ago. Many of these mines, in the Little Marias, the McCos and the Palens are still active claims so heed the no-trespass signs.

The only major paved roads in this

part of Patton Country are the state-federal routes, I-10, SR 177 and 62, and the portion of the Blythe-Rice road to Midland, maintained by Riverside County. State Highway 95, paralleling the Colorado River to the east, marks the perimeter of Patton Country here.

The Bradshaw Trail, described in *Desert* two months ago, is the main access to the southern perimeter of Patton Country, and is generally in good, slightly washboard condition, except after those rare cloudburst storms when it is likely to be impassable.



Historic Hotel Indio, one of the oldest resort buildings in the lower Coachella Valley, gained fame of another sort in 1942 when it became headquarters for General George S. Patton's desert armored training center to the east. Indio was the main supply point for the huge camp that sprang out of the cactus 35 miles away.

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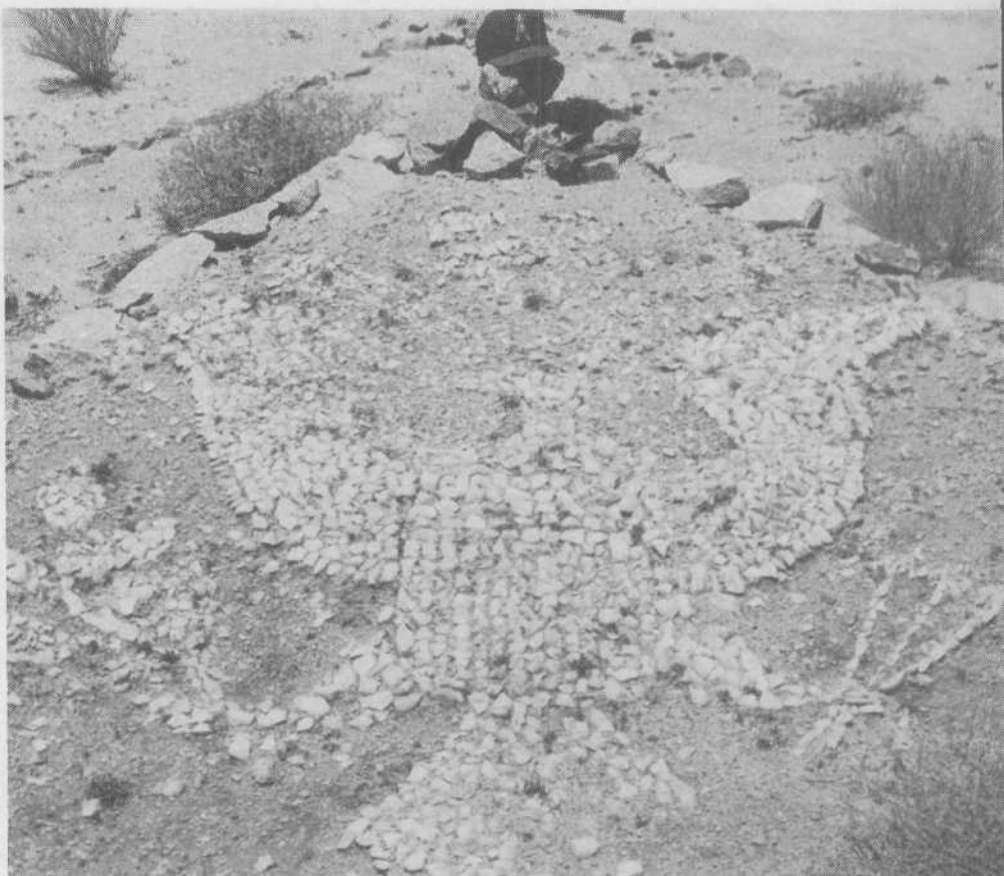
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Quartz chips mark a lasting replica of the U.S. Seal at the old artillery headquarters area of the Desert Training Center near Iron Mountain Pumping Station. The World War II souvenir, still intact, is about five feet in diameter.

Off these major routes are countless desert tracks, some of them frustrating deadends, others good secondary through routes.

Accurate maps for Patton Country are hard to come by. The U.S. Geologic Survey 15-minute series topographic maps, generally the best overall for these monthly trips, are not totally satisfactory in this case, because of their age. Some of the area has not been surveyed or mapped in more than 25 years and roads shown on them may not be passable—or exist at all! This is particularly true of the Ford Dry Lake-Palen and Chuckwalla Valley area east of Desert Center.

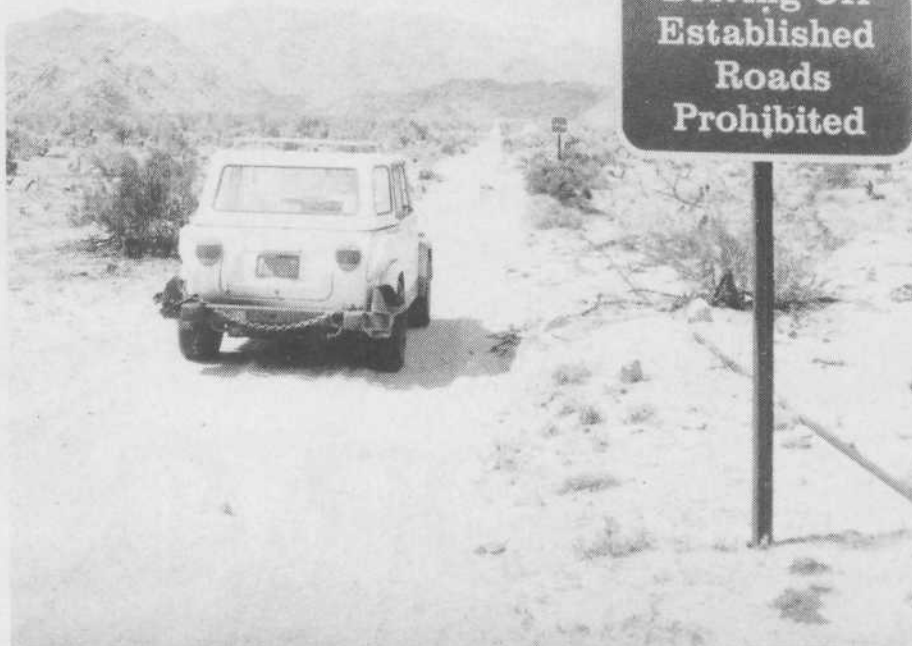
Part of the problem stems from construction of Interstate 10, which does not follow the old 60-70 route. Some of the secondary roads can be reached from the old highway which is a frontage road with overpasses for the Corn Spring, Graham Pass-Chuckwalla Spring and Wiley Well routes to the south. Some of the old tracks to the north of the freeway can be reached from these offramps, or cross country from the Desert Center-Rice highway.

Camping is generally permitted

throughout the Patton region but the only organized campgrounds are the BLM enclosures at Wiley Well, Corn Spring and Coon Hollow. There is no safe water other than at the campgrounds and perhaps Chuckwalla Spring—which has been refurbished since the big storm of September, 1976.

The only off-roaders route across the rugged middle of Patton Country from east to west is the old Palen Pass-Arlington Mine road. It leaves SR 177 (Desert Center-Rice road) 10 miles south of its junction with SR 62, near Iron Mountain Pumping Station. It emerges on the east on the Blythe-Rice road near Inca siding 19 miles northwest of Blythe. In between, it traverses the Palen-Granite and McCoy Mountains over some little-traveled but highly scenic and historic mining country.

Watch for the fading paint on some prominent signboards near the Palens and Granite Mountains denoting unexploded ammunition, mostly artillery shells and practice aerial bombs. These signs frequently end up as campfire wood for unprepared groups, which is a bizarre form of Russian roulette for those



Road to Lost Palms Oasis, just north of Chiriaco Summit and Interstate 10, is marked by the National Park Service. During Patton's tenure on the Colorado Desert, the little canyon spring and its fringe of native palms were off limits to training tank troops and has remained relatively intact over the ensuing 35 years.

who venture after them—but no off-roaders have been blown up out there in my memory!

The most visible areas of Patton's tenure occur along the west and northern perimeters of this area—along Cottonwood Springs Road and near the Iron Mountain pumping station on the Metropolitan Water District's Colorado River Aqueduct.

Two hand-hewn rock altars, a crumbling sand and cement relief map of the entire Desert Training Center and a network of confusing roads between Iron Mountain and Freda mark the vicinity of the old northern headquarters. The altars were built by tanker and armored artillery crews under the Walker regime, while the huge relief map apparently was built by Patton's first troops.

Much of the Iron Mountain area is MWD property and it's advisable in advance to inquire if you can visit these historic sites.

The best places to get accurate information about what is still there—and just where—are Rice, Chiriaco Summit and Desert Center—also the only reliable places for gas, water and food in Patton Country.

Whether you find souvenirs of Patton's regime or not, a visit to his historic Camp Young-Desert Training Center is worth the long trip.

□

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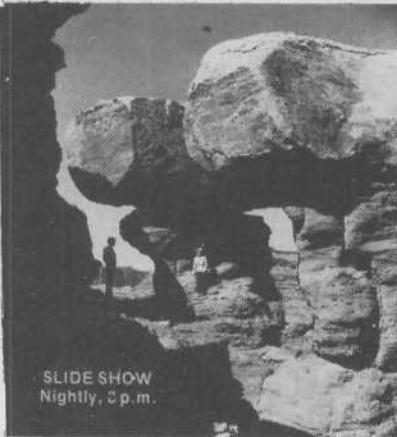
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Before it was restored by interested persons this cemetery had been torn apart by vandals.

CRIME STOP ON

THE VIEW from the top of the mountain was magnificent. Indian ruins, probably Anasazi, capped the summit and spread their way down the side, looking much as Tuzigoot must have looked prior to its excavation. Broken walls showed the extent of the massive dwelling. Pot sherd and lithic material littered the ground. The air was warm. All was still except for the ceaseless blowing of the breeze and the hum of an occasional bee. Perfect, you say. It would have been except for one fact. The beauty of the site had been marred by the digging of professional scavengers who make thousands of dollars each year through the destruction of pieces of our American heritage.

A desert ghost town in Western Arizona had stood deserted and intact for half a century. Its small cemetery an eternal reminder of those pioneers who lived, worked and died to help settle an unsettled land. Today their graves have been desecrated by fortune hunters who hold nothing sacred—especially if they can make a fast buck in the process.

In north central Arizona an ancient salt mine stands abandoned. A mound of salt is the most dominant reminder of first the prehistoric Indians who dug the

salt from the earth with their bare hands and crude implements and later of mining done by modern man. The mound glistened in the sun—until recently. Now it is scarred with the tracks of motorcycles.

There are dozens of sites like these all over the Southwest. This wanton destruction of historical sites is a big worry to all of us who are interested in the preservation of our heritage. And this type of destruction is going on, not just in Arizona, but all over the country where there are unprotected sites.

Sheriff Paul E. Blubaum of Maricopa County, Arizona, a man of vision and an innovator in the field of law enforcement, recently took positive action to try and curb some of this vandalism and destruction by forming the new Historic Sites Posse. This posse is under the direction of Captain Harry Potter, who is also a member of the Arizona Archaeological Society.

According to Captain Potter, the Historic Sites Posse was founded as a coordinating organization between interested groups. It will work with groups such as the rockhounds, hunting and fishing organizations, treasure hunters, historical and archaeological groups and

even private citizens who have historic sites on their property or are just interested in their preservation. The idea of the posse is not to keep these people away from their favorite areas, but to invite their help in preserving those sites for future generations.

Captain Potter said, "I envision the Historic Sites Posse in the form of a nucleus of interested people who will go to the grade schools and the high schools and acquaint these children with the need of protecting the sites. And also to bring this to the attention of officers of private organizations such as the archaeology society, wildlife associations, the mineralogical society, just to name a few. All of these people, through their joint and coordinated efforts can make a tremendous impact on the State and ultimately, I hope, the nation."

Captain Potter has already received requests for more information on this concept from other agencies around the State.

By the same token, Captain Potter hopes to coordinate with Federal organizations such as the U.S. Forest Service, the Bureau of Land Management and Parks Service on whose land many of these sites are located. He says the pro-

*Captain
Harry O. Potter
points to
destruction done
at the Brazalete
Pueblo.*



THE DESERT

by NANCY BRANDT

gram will be very similar to a Crime Stop program used in many towns and cities and with that in mind he warns, "I would caution, as we do in the cities, any individual from attempting to interfere if they see vandalism or thievery going on. Don't forget, many of these people are armed and if they are professional, or even if they're not, they wouldn't hesitate to shoot you. So be cautious. If you can get license numbers, do so. If you can take pictures without being seen, do so. And then get the information to the nearest Sheriff's Department or Forest Service Officer, wherever you might be. If you have a citizen's band radio, you can relay information much faster. CBers know how to do this."

Captain Potter went on to say, "There is a great deal of destruction and not only in the fields that we've talked about. Every police department in the United States is trying to convey that they do not have man power to personally survey and watch every private dwelling, so what they are doing is trying to form Crime Stop programs where the citizens can, to some degree, protect themselves by watching each other's homes and reporting anything suspicious to the police. What I am trying to do is simply

carry this to the wilderness area. Let's protect our property out there as well."

At present the State of Arizona, like many other states, does have antiquity laws. However, Captain Potter and his group are lobbying for even stronger laws—laws that will have more teeth in them. In the last Legislative session Dr. Lindsey of the University of Northern Arizona caused to be introduced a bill that will broaden the Arizona Antiquities Act and put vandalism and thievery of pictographs and petroglyphs under the State Criminal Code—a step in the right direction.

With this type of program one of the biggest problems is manpower. There are only six members of the Historic Sites Posse at this time, but this problem has been minimized greatly by the Sheriff's Air Posse flying surveillance over many of the sites. These flights have been expanded to cover six counties in the State. Combined with other posses in operation in Maricopa County alone, there are now 3,000 plus persons actively engaged in this effort.

While we are talking mainly about damage done deliberately, much of the damage to these sites is done by persons who are not aware of what they are

doing. Cases have been reported in which campers using ruins for camp sites have pulled wood from the roofs of the structures to use in their campfires. Often this is enough to make the entire roof collapse. Sightseers, who climb around the ruins, alter the archaeological value. Frequently these persons would be horrified if they realized the damage they were doing.

The U.S. Forest Service is using one method which may deter vandals at some of their sites. They have located sensors at many of these sites. These are the same type as were used by the military in Vietnam. They are sensitive to the human voice (can listen in on conversations at the site), pick up footsteps of either man or beast and even pick up the sound of an airplane flying overhead.

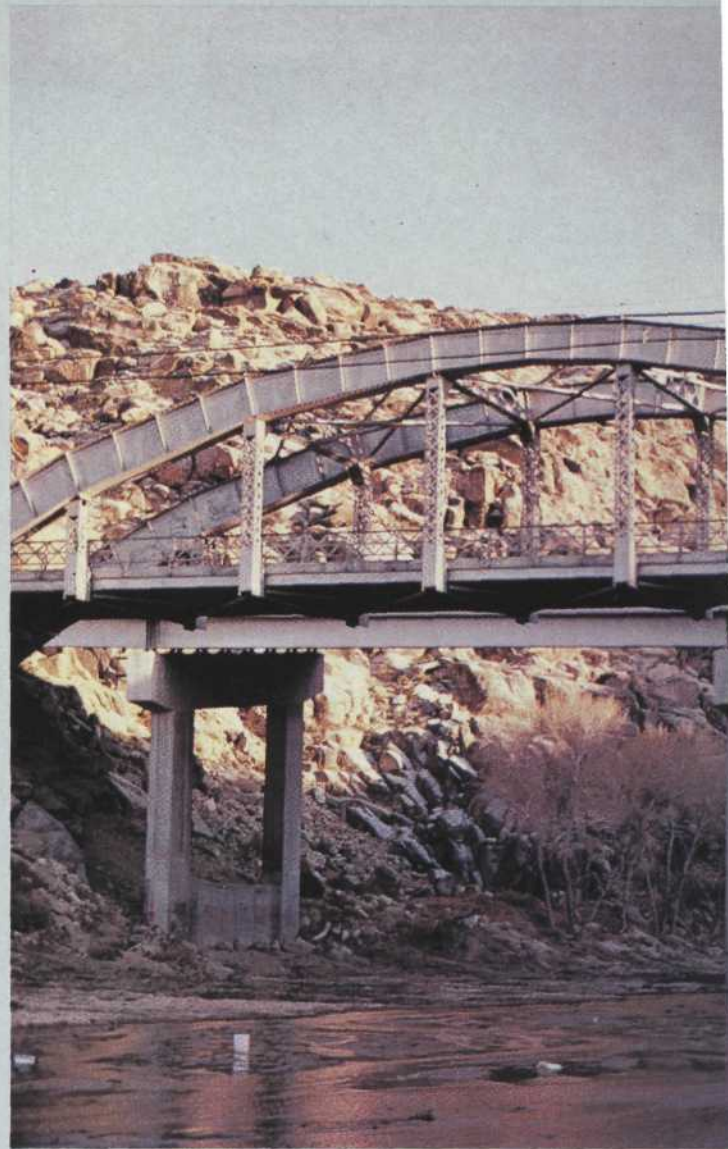
Whether you are scrambling up the side of a mountain in the wake of Captain Potter in 100-degree-plus weather to take pictures of an Indian ruin or vacationing beside a cool stream—we can all join hands to be sure that these sites are protected for our children and our grandchildren.

The Maricopa County Sheriff's Historic Sites Posse is one step forward—there are others. □

RIVER OF THE DESERT

by ALBERT U. MILLSPAUGH

*Mojave River in the winter
flowing through the Narrows gorge
beneath the old Rainbow
and new modern bridge.*



IMPRESSED BY the tale of a strange river that tumbled down the wrong side of a mountain, ran beneath its own river bed, rising occasionally to the surface and finally disappearing forever under desert sands sent me driving out to the Mojave Desert to find out what it was all about.

I soon discovered that it was nothing new. The river, named the Mojave, had been doing just that for hundreds of years. It has puzzled desert newcomers like me as well as Indians, Spanish explorers and American pathfinders, trappers and settlers for just as many years.

I started my exploration by driving with my family out to the fairly new Mojave Forks Dams just south of Hesperia, California. The earthen dam was completed in 1971 and built for flood control purposes. There is no water behind it.

The Forks or the confluence of the West Fork of the Mojave and Deep Creek behind the dam is the beginning of the Mojave River proper.

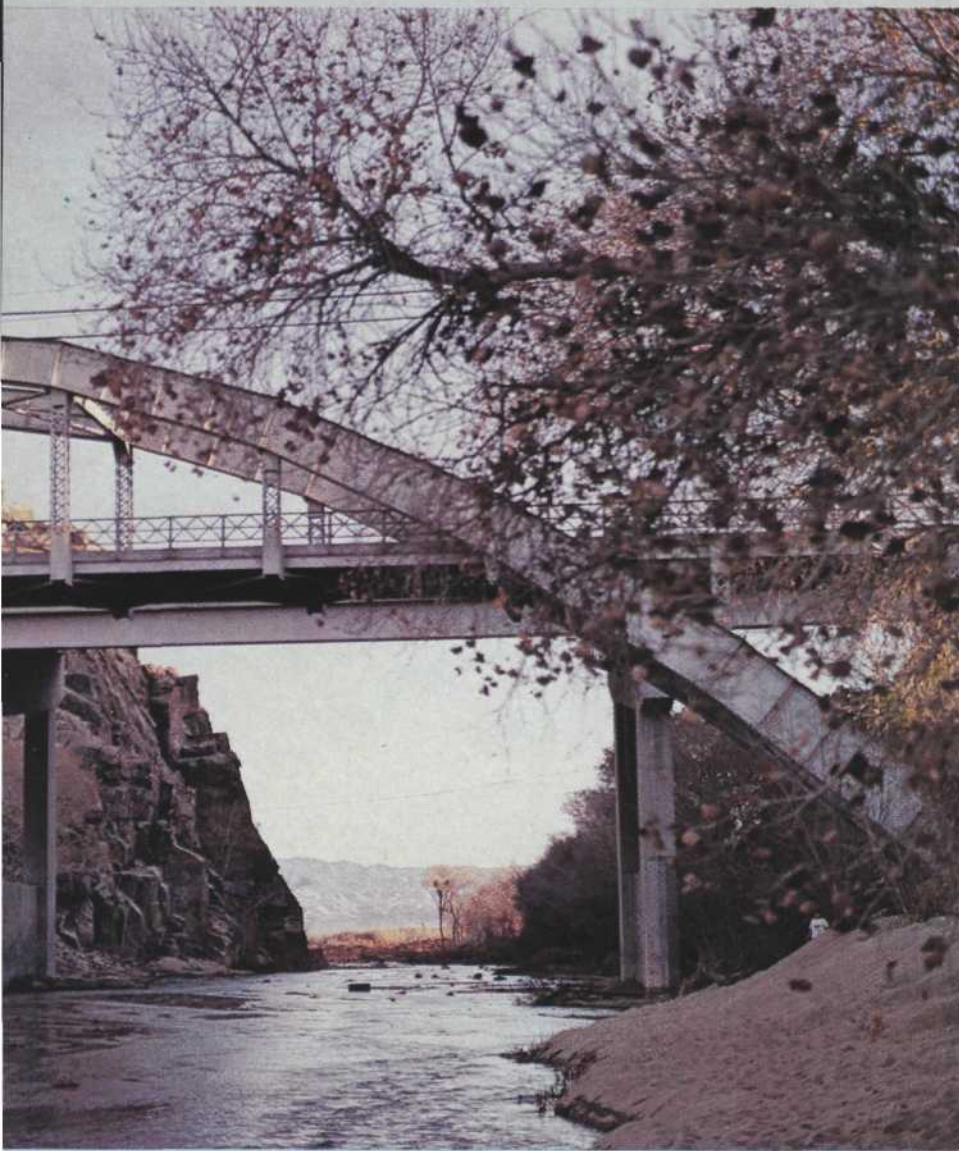
An exploration of this river is a trip into the past. This strange stream of water had its beginnings in the Pluvial Period when torrents of rain poured down from the sky and today's desert was covered with rivers and lakes. The streams racing down the northside of the newly-formed San Bernardino Mountains eventually formed the Mojave River. The great flood plain below the mountains where Hesperia and Victorville sit today was filled with alluvium and the river wandered across it seeking a permanent channel.

At the middle of the valley small ancient granite hills formed at an earlier period offered some resistance to the

mighty river until it cut a channel through them. Today this gorge is called the Upper Mojave Narrows. Further north, the river cut through some smaller hills forming the Lower Narrows.

The river with a mind of its own turned northeast not south or west toward the ocean like most common sense rivers of the Southwest. It flowed into a large depression walled on the east by the Cave and Cady Mountains. There it formed a huge lake estimated to be as large as 300 square miles. This ancient lake is now referred to as Lake Mannix after a railroad siding in the vicinity. The western shore of the lake reached into today's Barstow area.

Eventually the river overflowed the lake at the junction of the two mountain ranges cutting a channel so deep the lake was drained. The large gorge cut



through the clay sediment in the lake bottom created what was called Cave Canyon for years. Today it is named Afton for the railroad siding at the western end of the canyon.

After leaving Afton Canyon, the river spread over a giant plain that formed the north-south trough leading to Death Valley. In those days, with the large volume of water flowing down from the mountains, the river filled many lakes. First Little Mojave, then Soda Lake and Silver Lake until it finally poured into the Amargosa River on its way to Death Valley. Some of these lakes were around long enough to encourage the growth of mollusks which early man added to his menu. Later Indians lived and farmed near them.

Following the wet period came a drought. The mighty Mojave became a

trickle, the lakes became dry salt playas and the land became a desert. But the river, with wisdom of the ages, went beneath the desert sands to prevent the loss of its precious water to the desert's heat. Today, it only surfaces where obstructions beneath its sandy bed forces it up into the desert sunlight.

A Spanish priest, Father Francisco Garces, is given the honor of being the first white man to discover the Mojave River. Over two hundred years ago on March 9, 1776, after leaving the Colorado River, he wrote in his diary, "I found a stream bed filled with rather brackish water." He named it the Arroyo de Los Matires—Creek of the Martyrs. It was only one of the many names given to the river.

Father Garces met the river just east of Afton Canyon. He continued through

the canyon following the Mojave toward the coast. He was following the route Indian traders had used for hundreds of years between the Southwest and the Pacific Ocean.

In 1826, American trapper Jedediah Smith reached the river and followed it into Southern California. He named it the Inconstant River. Today a monument marks the place where Garces and Smith crossed the divide on their way to San Gabriel.

Captain John C. Fremont reached the river in 1844 and remarked about its disappearing act in his journal. Fremont named it the "Mohahve" after Indians living near the Colorado River. In the 1850s, Lieutenant Edward Beale led a herd of camels driven by Syrians along the river. It was perhaps the strangest of the caravans to follow the old river trail.

The river soon became the route of explorers, pioneers and emigrants from Colorado, Salt Lake, Santa Fe and other parts of the Southwest. First it was just a trail—a trail of many names. Parts of the Old Indian Trail, Garces Trail, Mormon Trail, Mojave Trail, Salt Lake Trail, Government Road and Old Spanish Trail followed the river.

Later, the trail became a wagon road and finally railroad tracks followed the river bed. Just prior to World War I, the first automobile bounced over the road-bed which later became Routes 66 and 91. Today, Interstate 15, part of a vast nationwide highway system, follows most of its length.

For one to really explore the river and enjoy the beauty of it and the surrounding area, you must start where the river begins. Many times since our first encounter, my children, my wife, Barbara, and I have driven up the West Fork and watched the water ripple over the small stream bed on its 147-mile journey to the desert sink.

West Fork begins in the Summit area on the timber-covered northern slope of the San Bernardino Mountains and flows into the clear water of Lake Silverwood. The lake is part of the California Aqueduct System and is used to store water from the Feather River hundreds of miles to the north. Today, the lake has become a thriving recreational area for

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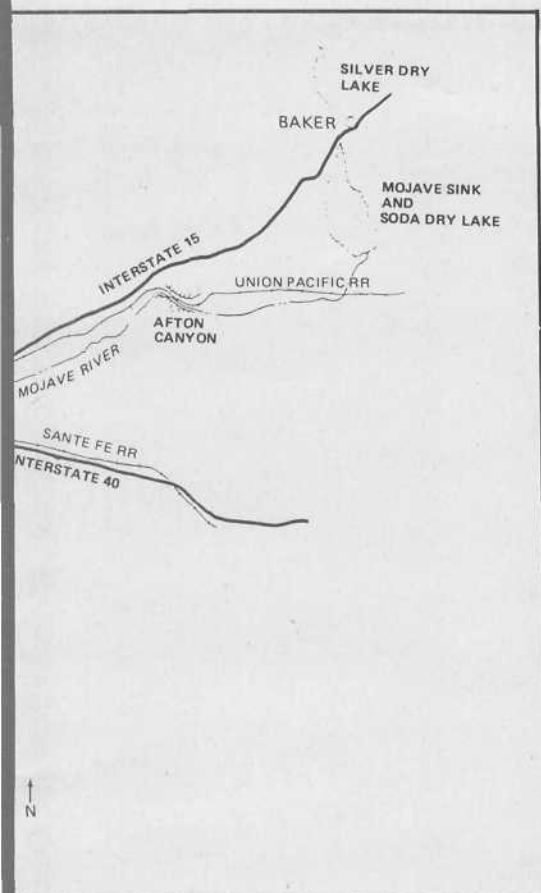
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boaters and fishermen. It has swimming beaches and hundreds of picnicking sites.

Below the lake, the river is usually dry until it reaches the Forks. Here, West Fork surfaces for a short distance before meeting the cold water of Deep Creek pouring down from Holcomb Valley and the Arrowhead Lake area. A hike up Deep Creek is a must for all visitors of the river. In the spring, the trees in Deep Creek canyon are green and the flowers are blooming. When summer comes, each small reed-lined pond becomes a swimming pool for many young campers and hikers, and in the fall cottonwoods, sycamore and oak trees break forth into a thousand shades of orange, yellow and red. Nearby, Mojave Forks Regional Park is open year around with ample campsites for all visitors to Silverwood Lake and Mojave Forks.

A few miles below the Forks, the river disappears under the sandy river bed as it passes Hesperia. Fourteen miles later, it appears again just above the Mojave Narrows gorge in Victorville. The Narrows was a stopping place for all followers of the river trail. The wide green valley was a haven for Indians, a resting place for Father Garces and Jedidiah Smith and a source of water and pasture



for the livestock of early pioneers. One of the first buildings in the valley was a Mormon way station. It's still standing south of the Narrows on the Campbell Ranch.

The Sante Fe Railroad laid its tracks through the gorge in 1882 and perhaps the most famous bridge to cross the Mojave spans the Narrows. The old Rainbow Bridge was built high to protect it from the ravaging waters of flash floods that often roar down the river. The bridge is still there, but its use has been replaced by a modern one.

In 1968, 840 acres of the Campbell Ranch were preserved forever as the Mojave Narrows Regional Park. It is an excellent stopping place for your exploration of the Narrows. The park has facilities for camping, fishing, boating and hiking.

Downstream from Victorville, the river reaches Barstow, a giant railway terminal. In the early days, Barstow was the junction of the Old Spanish Trail, the Mormon Trail and many others. Today, it's a hub of railroad and automobile traffic between Southern California, Nevada, Utah, Colorado and Arizona. Barstow is also the home of the Mojave River Valley Museum and the new BLM Way Station which provide a wealth of

information on the river and the surrounding desert. They are open seven days a week.

East of Barstow, along the shores of ancient Lake Mannix, evidence of early man, 50,000 years old, has been found. An archeological dig is now in progress in the Calico Mountains just off Interstate 15. In the Rainbow Basin area north of Barstow, 25 different fossil beds have been found. Fossils of prehistoric camels, small rhinos, saber-tooth cats, 40-inch horses and dog-bears five to ten million years old have been discovered.

Many miles later, after occasionally appearing and disappearing, the river arrives at Afton Canyon. It's the last stop before the river is gone forever. The canyon is a verdant refuge of small lakes, marshes and streams surrounded by towering cliffs of green and grey clay overlaid with orange and buff-red conglomerate. In many places, the cliffs have been eroded by rain and wind until they remind one of a medieval castle standing guard over a bed of sand and a twisting stream of water.

Afton Canyon is a paradise for bird watchers. The marshes and lakes abound with ducks, coots and other waterfowl. The trees are filled with song birds. Redwing blackbirds rest among the cattails and swallows dart above the ponds. The snowy egret flies silently through the trees and high above the turkey buzzard glides on the up draft from the cliffs below.

Like many desert oases, the canyon attracted first the Indians and then other desert explorers. The Indians lived in the many caves that line the canyon walls. Later, Spanish and American explorers and pioneers used the canyon as a place of refuge and a trail into Southern California.

Beyond Afton Canyon, the river flows out onto Soda Dry Lake or the Mojave Sink as it is sometimes called, where, after 147 miles it truly sinks into the sand and is gone forever. Except in some flood years, its waters may cross Soda Lake and flow into Silver Dry Lake before sinking away.

This river of the desert may be gone when it reaches that desert sink, but your enjoyment of it is only beginning. It can be explored again and again until this backwards and upside down river gets as close to your heart as it has to mine. □

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A portion of Hornsilver's once bustling business district. The old mining camp is still inhabited by a handful of residents and is now known as Gold Point.

Nevada's Gold Mountain(s)

by BETTY SHANNON

Jim Shannon, Placerville, looks at the boiler, which is all that remains of the portable steam engine that once powered a six-foot arrastra on Gold Mountain.



GOLD ORE was first discovered at Gold Mountain in 1866 by a prospector named Thomas Shaw.

Gold ore was first discovered at Gold Mountain in 1901 as a spinoff of the Tonopah boom.

Since both of the above seemingly contradictory statements are true, you can begin to get an idea of the problem when someone mentions Nevada's Gold Mountain. Not only are there two Gold Mountains separated by 35 years in time, but to forever add to the confusion still another old mining camp was called Gold Mountain at one time. All three historic sites are located in Esmeralda County, and furthermore, the three Gold Mountains have all been known by other names during some part of their sporadic lifetimes.

Headframes and prospect holes of the 20th century Gold Mountain can be seen from Highway 95 about four miles south of Tonopah. However, the camp is usually remembered as Divide, the name it acquired at the beginning of a second rush in 1919. Its history, along with that of



several other ghost towns near Tonopah, was detailed by Mary Frances Strong in an article in *Desert* of June 1971.

Gateway to the two older Gold Mountains is through Gold Point, approximately 14 miles southwest of Lida Junction, half of that distance via a dusty but graded road.

Gold Point itself has undergone a series of name changes. It was born in 1868 as Lime Point, the name selected because of nearby lime deposits. Silver ore mined there during the 1880s was hauled to a mill near Lida for processing. But after several years, mining ceased and the town lay dormant until the Great Western Mine was opened in 1905. A deposit of high grade hornsilver was discovered in 1908. During the following boom the enthusiastic newcomers rechristened the camp Hornsilver. Intermittent mining operations continued until World War II, but in later years the ore yielded more gold than silver. So in 1927 the inhabitants decided to again change the town's name. This time it became Gold Point.

Gold Point slumbers quietly today. Its last business, a gas station and grocery, is closed, but a handful of residents stay on, some living in a few of the several dozen remaining frame structures, others in modern mobile homes.

A sign informs visitors that the town is still inhabited and is off-limits for shooting, digging, and treasure hunting, but "picture taking is O.K." For the latter I was grateful as a row of buildings, a portion of the old Hornsilver's business district remains, creating a picturesque scene with Mount Jackson in the background.

A network of dirt roads fans out into the desert south of Gold Point. There are no road signs to indicate the route to either of the old mining camps. However, with one of the large Army Corps of Engineers' maps, which are sold by the U.S. Geological Survey, spread across my lap I confidently predicted that we would be exploring the slopes of Gold Mountain within the hour.

Several hours later, after much backtracking and by a very circuitous route,

we finally arrived at the foot of Thomas Shaw's mountain of gold.

I had made the first error in navigation immediately beyond Gold Point. We had taken the first left fork when we should have stayed to the right. For miles we wandered within an uncharted, labyrinth-like maze. Our travels had taken us between, over, around, and through a series of low hills, and finally down a broad wash. However, the journey was not without its rewards as the scenery is pleasant. The hills are dotted with Joshua trees, and here and there are remnants of mining activity.

Gold Mountain is a massive mountain. Its lower flanks are covered with a dense growth of brush, gradually giving way to stands of pinyon pine. A steep trail winds to the top of the 8,150-foot peak, where amid bold granitic outcroppings, bonzai-like pinyons and alpine wildflowers tenaciously struggle for survival.

The view from the summit offers a rare opportunity to view a vast land, little changed by man. For one exhilarating moment grab a glimpse into infinity,



both in time and space. Angular ridges far below seem unreal, their size reduced to the miniature scale of a bas-relief map. Desert roads cross the landscape like a thread laid across a piece of rumpled fabric. Mountain range after mountain range fades away until land form and atmosphere meld into an undefinable blue haze on the far distant horizon.

It was to this mountain that a group of lone, Nevada prospectors made their way in the fall of 1865. However, they had barely set up camp when they were attacked by Indians. During the ensuing nighttime affray two of the men were killed, another wounded. The survivors hastily broke camp and retreated to Silver Peak.

The following year, one of the men, Thomas Shaw, returned to the mountain. This time, undisturbed, he found what he was looking for, an outcropping of gold ore. Elated with his success, he named the peak Gold Mountain.

But initially neither Shaw's discovery nor the rich sounding name generated much excitement. Little work was done until 1871 when Shaw made some additional discoveries. One location yielded some particularly rich samples. Dubbed the Oriental, the new mine was developed by sinking a 150-foot shaft into the mountain. This time it looked like Gold Mountain might live up to its name.

A single cylinder portable steam engine was hauled to the remote location, its power replacing the traditional mule

in working a six-foot arrastra. The crushed ore and concentrates were then transported to Belmont or Austin for further reduction, a distance of more than 100 and 185 miles, respectively.

Using the most abundant building material in sight, the miners erected a dozen or so stone cabins and buildings on a north-facing slope. At first the camp was called Gold Mountain, but within the decade the name was changed to Oriental. A spring, farther up the slope, furnished an adequate although not an abundant supply of water.

Gold Mountain yielded some of the richest gold ore ever found in Nevada during the last century. Specimens from the Oriental mine were displayed in the Nevada exhibit at the Centennial Exposition in Philadelphia in 1876.

One theory is that Thomas Shaw may have found what Jacob Breyfogle lost. The legendary Lost Breyfogle mine has tantalized gold seekers for years, but facts and fiction about both the man and his discovery have become so interwoven that the truth is probably irretrievably lost. About the only point of agreement among all the many tales concerning the Lost Breyfogle is the richness of the ore samples as reported by Breyfogle's contemporaries.

Apparently Jacob Breyfogle left Austin in the summer of 1864 on a prospecting expedition. During his travels he found a promising outcropping and took some samples. Then the facts become blurred.

According to most of the stories Jacob Breyfogle was the victim of a vicious Indian attack from which he miraculously survived. The location of the alleged attack ranges from Death Valley's Daylight Pass to a spring east of Shoshone, and you can take your choice as to whether he was clubbed, scalped, or shot with a poison arrow.

Another version takes an opposite tack. In it the Indians are the good guys. It suggests that while Breyfogle was chasing his two saddle horses which had strayed from camp, he lost his hat, becoming badly sunburned, and subsequently, delirious. He was rescued by several Indians who cared for him until he was ready to travel. Regardless of what happened, eventually Breyfogle returned to Austin with his ore samples. But his mental condition was never the same and he remained confused as to where he had found them.

Breyfogle, himself, along with several other prospectors tried in 1866 to relocate the site. It has been reliably documented that their search centered in the Death Valley area. Therefore, it has been widely assumed that the Lost Breyfogle was in or near the foothills of Death Valley's Grapevine or Funeral Mountains. Although Gold Mountain is a good 50 miles north of the Funeral Mountains, it lies in a direct line between Austin and Death Valley. Oriental Wash at the base of Gold Mountain provides easy access to Sand Spring in the northern reaches of Death Valley.

So the possibility remains that the Breyfogle deposit, for which many men risked their lives over a period of many years, was rediscovered and developed long before the myth makers really got started on the story. However, if that is the case, the Lost Breyfogle proved somewhat less of a bonanza than the proverbial pot of gold at the end of the rainbow. Most of the ore did not prove as rich as assay samples. By 1881 only 10 men were still working on Gold Mountain.

Oriental did experience a mild revival a few years later. There was enough new activity to merit a post office which functioned from 1887 to 1900. But nowadays, the camp on the northern slope of Gold Mountain is one of Nevada's most forgotten ghost towns. In fact, if you should inquire locally about Oriental most likely all you'll get is a look of puzzlement.

*Opposite Page:
The Oriental mine on
Gold Mountain
yielded some of the
richest gold ore found
in Nevada during the
last century. The camp
which began life
as Gold Mountain
was renamed Oriental
and finally became
known as Old Camp.
A steep trail, [right]
winds to the top of
8,150-foot Gold
Mountain. The summit
offers a spectacular
view of the
surrounding
desert country.*



Sometime during this century Oriental became known as Old Camp and that is what most Esmeralda County residents still call it.

Half hidden by brush are the crumbling stone walls of the cabins and stores that date back to Oriental's heyday. On a nearby knoll are several newer frame structures, apparently from the Old Camp era of activity. One of these, a three-room cabin, is built directly over a deep mine shaft. Adjacent to it is the mines' blacksmith shop.

The old arrastra vanished long ago, but the portable steam engine and boiler, which had been the work horse of the primitive mill, were reported in good condition as recently as 20 years ago. Unfortunately, since then vandals have destroyed the engine atop the boiler, apparently by placing a charge of powder within the single cylinder.

Cattle now graze on the slopes and in the canyons of Gold Mountain. Water from the spring is piped to a tank and trough at Old Camp. In consideration of the animals' needs the area is posted, asking that visitors do not camp in the immediate vicinity of Old Camp. However, Gold Mountain is a big mountain and if you like to "rough it," you can find other places to stop and spread out a sleeping bag. Just about every ravine and slope has a prospect hole or tailings pile which can be reached by road or four-wheel-drive trail.

Shortly after Thomas Shaw made his

original strike on Gold Mountain he turned his attention to a ridge a few miles to the north where he made some additional locations. Within a year or two, however, he had abandoned these claims to work his more promising prospects on Gold Mountain. But Slate Ridge was not totally forgotten. Others moved in, taking over Shaw's claims and making additional discoveries. The area developed slowly as it was not until the late 70s that the major development, the Stateline mine, was attracting much publicity. The greatest drawback to a real boom was the lack of water. That necessary commodity had to be hauled in barrels from the spring on Gold Mountain. The price was a stiff \$3.50 a barrel.

However, by 1881 a townsite had been surveyed and because of the increased activity at the Stateline mine most of Oriental's residents had moved their baggage and businesses across Oriental Wash to the new community on Slate Ridge. And, whether in memory of the mountain they had left behind or in anticipation of greater riches, what did the inhabitants do, but name their new town Gold Mountain!

In 1882, a 15-mile pipeline had been completed bringing water from Tule Canyon to operate a 40-stamp mill and steam hoist, as well as to quench the townspeople's thirst. Although the nearest doctor was 85 miles away in Candelaria, the camp flourished during the de-

cade of the 80s. However, by 1890 the inevitable decline had begun and Gold Mountain's post office was closed a year later.

There has been recurrent mining activity on Slate Ridge during this century. The Stateline mine was reopened and amid the old town's ruins a new mill, machine shop, and bunkhouse were built. Gold Mountain was dead, but on the site the camp of Stateline was born. Even today, we were told, Stateline has not completely given up the ghost as a lone resident is doing further development work on the mine.

In our roundabout route to Old Camp we probably did not miss Stateline by more than a mile. But our dwindling gas supply prevented any additional exploration. By following the most traveled road the return route to Gold Point proved to be direct and easy.

To reach Old Camp on Gold Mountain from Gold Point, turn left at the general store and gas pump (closed). In a little more than a half mile the road forks, take the right fork. After another half mile the road forks again. This time take the left fork. Proceed approximately 3.3 miles to another fork and continue on the right fork about 3.5 miles to Old Camp.

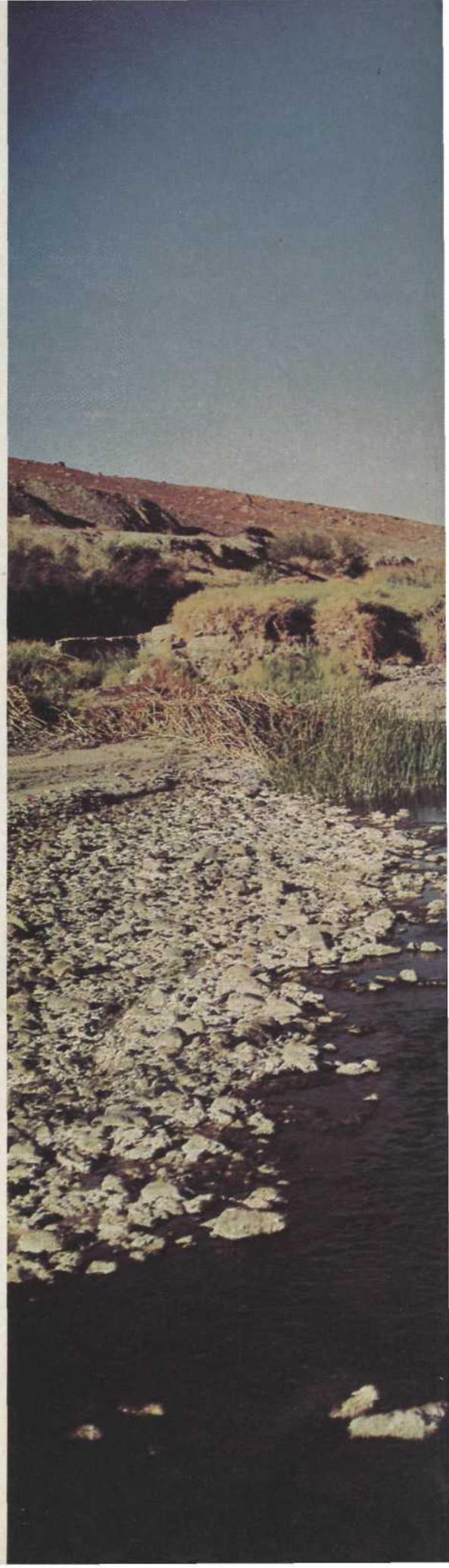
If you should take a wrong turn, don't despair. Probably, like us, you will eventually find your way to the mountain of gold. But consider for a moment the plight of poor old Jacob Breyfogle. He never did return to stake his claim. □

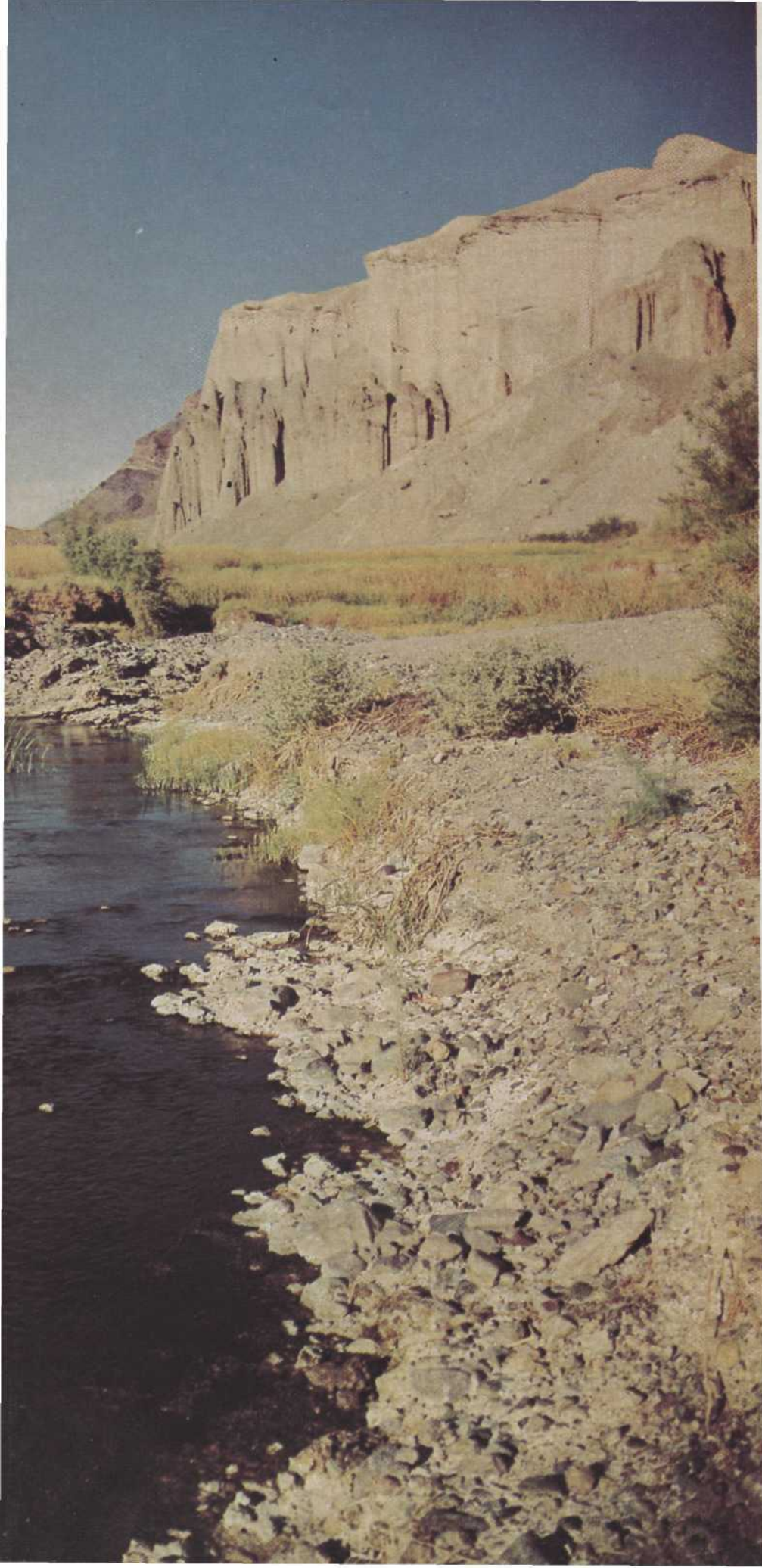
Amargosa Gorge, closed to vehicles by the BLM, is one of the scenic spots along the old Tonopah & Tidewater Railroad. Photo by George Service, Palm Desert, California.

RETRACING THE TONOPAH & TIDEWATER RAILROAD

by ROBERT and ANA COOK

Editor's Note: When this manuscript arrived at our office, it was postmarked Lima, Peru, as unlikely a point of origin as could be imagined. Surprise turned to delight when I discovered the writer/photographer was a desert and railroad buff who wanted to share one of his most memorable desert adventures: Retracing the long-abandoned Tonopah & Tidewater Railroad in a four-wheel-drive!





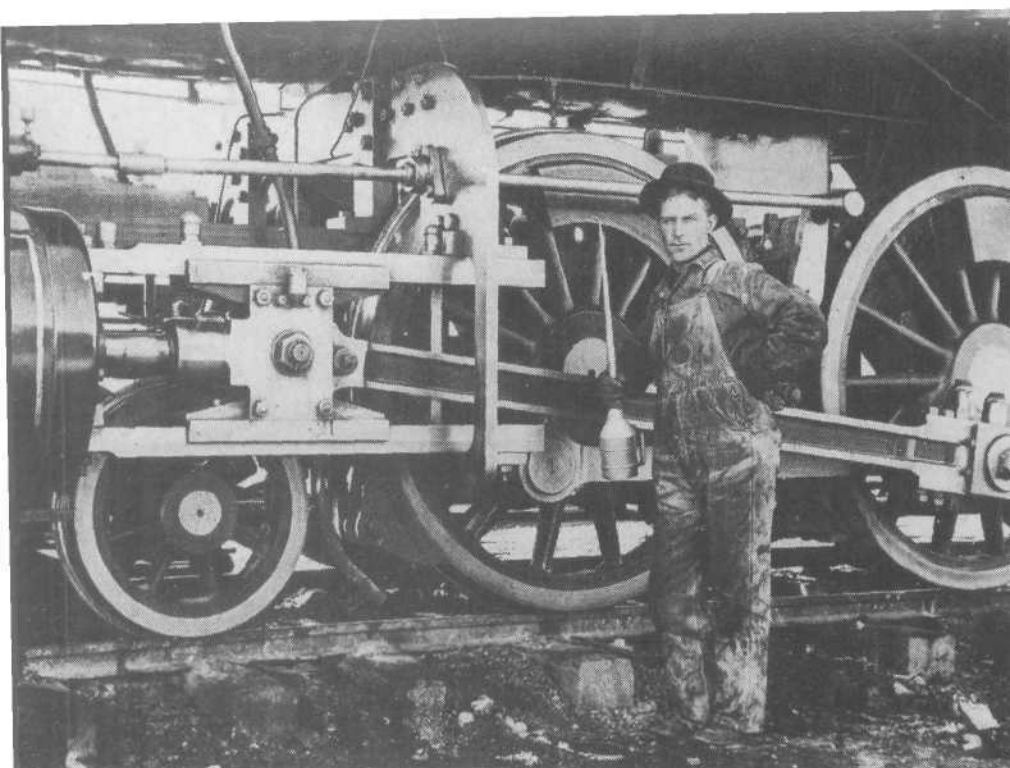
EVEN THOUGH the familiar clickity-clack of a Pullman or coach is missing, our Jeep provides a soft effortless ride along the abandoned railroad bed built five feet above the desert floor. Suddenly the right front wheel catches a soft eroded edge. The Jeep jerks to the right and fishtails down the embankment. We brace ourselves as the left wheels pull off the ground as if to roll. With a jarring blow a boulder halts our further advance. We teeter at a 45-degree angle, balancing on our right two wheels, similar to a stunt car at an auto thrill show. Although we only hang in the air a few seconds, it seems like minutes before we fortunately settle back down on four solid wheels.

Our derailment fared better than the Tonopah & Tidewater's locomotive No. 13 which ran amuck in the same locale almost 70 years ago. While making its scheduled 170-mile run between Beatty, Nevada and Ludlow, California, No. 13 derailed on a section of track that had been undermined by runoff from a desert storm. As the locomotive tumbled off the rails, two train crew members and a hobo were crushed beneath the slithering mass.

Although we escape with only bruises, we begin to wonder if we can really succeed in retracing the original route of one of the most controversial railroads ever constructed. Even 30-odd years after the tracks were taken up, the blood, the sweat and the vengeance of the T&T are still indelibly etched in the desert sands.

The T&T was the creation of Francis Marion (Borax) Smith, who in the 1890s succeeded in consolidating most of the borax operations in the eastern California deserts. Instead of the antiquated 20 mule team wagons, Smith envisioned steam tractors hauling out tremendous loads of borax from his Lila C mine near Death Valley. In 1904 his steam tractor was ready for its inaugural trip. After puffing 14 miles the "iron mule" sputtered to a definitive halt.

Recognizing the failure of the steam tractors, Smith investigated the feasibility of a railroad. He took note of the recent gold and silver discoveries in Goldfield and Tonopah, Nevada. A railroad to his Lila C mine could easily be extended north to these two bonanzas. A few months after the steam tractor



With an oil can scepter and a grimey railroad vestment Harry Cain poses aristocratically against the type of meticulous machinery that graced the T&T Railroad circa 1908. This 10-wheel locomotive lasted only four years when its boiler exploded in Amargosa Canyon. [Courtesy of the Hendrick Collection.]

fiasco, Smith established the Tonopah and Tidewater Railroad Company with headquarters in New Jersey. Smith grandiosely projected that the T&T would extend to San Diego, a tidewater outlet for the gold, silver and borax.

The actual southern terminus for the railroad was Ludlow, California at the geographic center of expansive San Bernardino County. After six hours of driving from Los Angeles we reached Ludlow via Interstate 40 out of Barstow. We poke around the few remaining buildings where the T&T interconnected with the Santa Fe Railroad, then head west out of town following a faint scar along the dry baked earth. We swing north, cross Interstate 40 and take advantage of a nearby dirt road which follows the well eroded T&T bed. An hour later the dirt road turns away from the railroad bed and heads into the Devil's Playground. Because of the lateness of the hour we decide to camp among the golden dunes and grotesque formations.

In the morning we shift into four-wheel-drive, climb off our comfortable dirt road, and begin bounding over terrain carved by centuries by rampaging storms. After being well mixed for an hour we arrive at Crucero, 26 miles by rail from Ludlow but 48 by Jeep. Here the same SP, LA&SL tracks (later to be known as Union Pacific) glitter beneath the blazing desert sun just as they did in 1906 for a bitter Borax Smith when he watched the T&T tracks being laid across the railroad of his accursed com-

petitor, Senator William A. Clark.

Just 10 months earlier Senator Clark had encouraged Smith to interconnect the T&T to his own SP, LA&SL at Las Vegas. To Borax Smith this was an ideal base of operations, since it provided a minimum distance to his Lila C mine. Within a few months Smith assembled the equipment, mustered a crew of workers, and began pushing a grade north from Las Vegas. In the fall of 1905 Smith's venture appeared very attractive. The bonanzas at Goldfield and Tonopah were producing and recent news of fabulous strikes near Beatty, just 50 miles north of his Lila C mine, seemed to insure success for the T&T. So attractive appeared the venture that Senator Clark sent his own crews into the field to survey a railroad route to the gold fields.

When Clark refused to permit the T&T to interconnect with his SP, LA&SL, Smith turned to the Santa Fe for assistance. With adequate assurances of cooperation, Smith quickly shifted his base of operations to Ludlow where the interconnection with the Santa Fe could be accomplished. From Ludlow Smith would have to build 50 additional miles and over more difficult terrain than from Las Vegas.

With a 12-mile head start and a shorter distance to cover, Senator Clark formed the Las Vegas and Tonopah Railroad Company and commenced building in January 1906. Meanwhile, a simmering Borax Smith, with an established and reliable construction crew, raced past

the Union Pacific tracks at Crucero with 26 miles of completed track behind them.

With the same 26 miles of T&T roadbed behind us we head the Jeep up the Union Pacific's railroad bed, bump over the single pair of tracks, and slide down the opposite side. A hundred yards to the north we find the trail of the T&T. In a cloud of dust we scramble along rough terrain until we reach dry Soda Lake. The hard smooth surface allows us to make rapid progress for the 10-mile journey to Baker on the northern rim of the lake.

North of Baker the desert thunder storms have been kind to the T&T grade, so for the 20 miles we are able to drive most of the distance on top of the bed. In sections all of the original ties are still in place and we suffer through jostling similar to bad washboard. By late afternoon we pass to the right of the Dumont sand dunes, the highest of which is over 400 feet. Just beyond these mountainous dunes we meet the treacherous and normally dry wash of the Amargosa River.

When Borax Smith faced the Amargosa Canyon 90 miles from Beatty, scheduled trains of Clark's LV&T were running to within 45 miles of Beatty and track laying was proceeding on the final section. Despite the oppressing heat of the Death Valley summer, Smith anxiously tried to push his T&T through the canyon to reach the flat Amargosa Desert where construction could once again continue at full speed. After his regular crews abandoned the "hell hole," he brought in Japanese laborers and then Mexicans without any success. The *Goldfield News* in July 1906 summed up Smith's plight, "He could not get his men to work at this time of year because of the insufferable heat. Men died off like flies, and the rest fled from the death pit." Despondently, Smith suspended construction and conceded the first round to Senator Clark. By the end of the summer the LV&T reached the gold fields near Beatty and scheduled service commenced on October 18, 1906.

With a Pennzoil scepter and a spotless railroad vestment Robert Cook poses aristocratically against the type of meticulous machinery that graced the T&T Railroad circa 1974. This four-wheel-drive Jeep lasted only three days before derailing and breaking an axle in the Amargosa Desert.

With the arrival of cooler weather an embittered Borax Smith redoubled his efforts to breach the formidable canyon. After three 500-foot trestles, immense cuts and fills, and much hardship the first train chugged through the Amargosa Canyon to Tecopa in May 1907.

We spend the night outside of Tecopa and in the morning we pay a visit to the hot springs. After a relaxing cleansing we locate the T&T grade on the snow white salt flats just west of town. The five-foot-high grading is in excellent condition and the Jeep rides easily along the smooth salt surface. For a mile and a half we kick up a cloud of white saline dust, until a 40-foot break in the bedding is encountered. I climb out and approach the gap. At the edge my foot breaks the crusty surface and the ooze swallows my foot and ankle. We gather about 20 odd T&T railroad ties and lay a tenuous gangway on top of the swampy surface. Cautiously we maneuver the vehicle on the first series of ties. Bang! Whiss . . . Our right front tire goes flat. An hour of sloshing in the mud awards us with a tire well punctured by a four-inch T&T rail spike.

From the salt flats of Tecopa to Death Valley Junction, Highway 127 utilizes the old T&T right-of-way. No sign of the old T&T grade is visible until a few miles before Death Valley Junction, where the bedding crosses a dry lake. At this point on August 16, 1907 Borax Smith completed a seven-mile branch line to this Lila C borax mine. Later in 1914 Smith tore up the Lila C branch of the T&T and replaced it with the narrow gauge Death Valley Railroad. The DVRR ran 20 miles to Ryan and a "baby gauge" (two-foot gauge) railroad extended service another five miles along precipitous hills to new borax mines.

North of Death Valley Junction the old

While crossing the Amargosa Desert upon the T&T Railroad bed, we pass the only other car we would see on the four-day journey.

T&T grade follows the wash of the Amargosa River. For the remainder of the afternoon we use four-wheel-drive to crisscross back and forth across the wash trailing the easily visible but well deteriorated bed. After 20 miles we arrive at a point where the railroad bed becomes drivable.

We waste no time in mounting the five-foot-high T&T grade. Hurtling along at the breakneck speed of 35 mph, the Jeep catches a soft shoulder and derails. We come to a stop balanced only on the two right wheels, then gently settle back on all four wheels. Fortunately we do not suffer any serious personal injuries, but the rear axle shaft was

broken. Using only front wheel drive, we limp one mile to the 200-foot-high Big Dune, the only large sand dune in the entire Amargosa Desert. In the lengthening shadow of this solitary dune we set up camp and affect the necessary repairs to continue the following day.

With only 21 miles of T&T roadbed remaining out of the 170 miles, we begin the fourth day in high spirits. In less than one hour we cover 12 miles across the Amargosa Desert without incident. We find the ¼-mile spur leading to Carrara before reaching Beatty. Although no trace of this once booming town now exists, the scar of the three-mile Lidger-

Continued on Page 46



Desert GHOSTS

by HOWARD NEAL

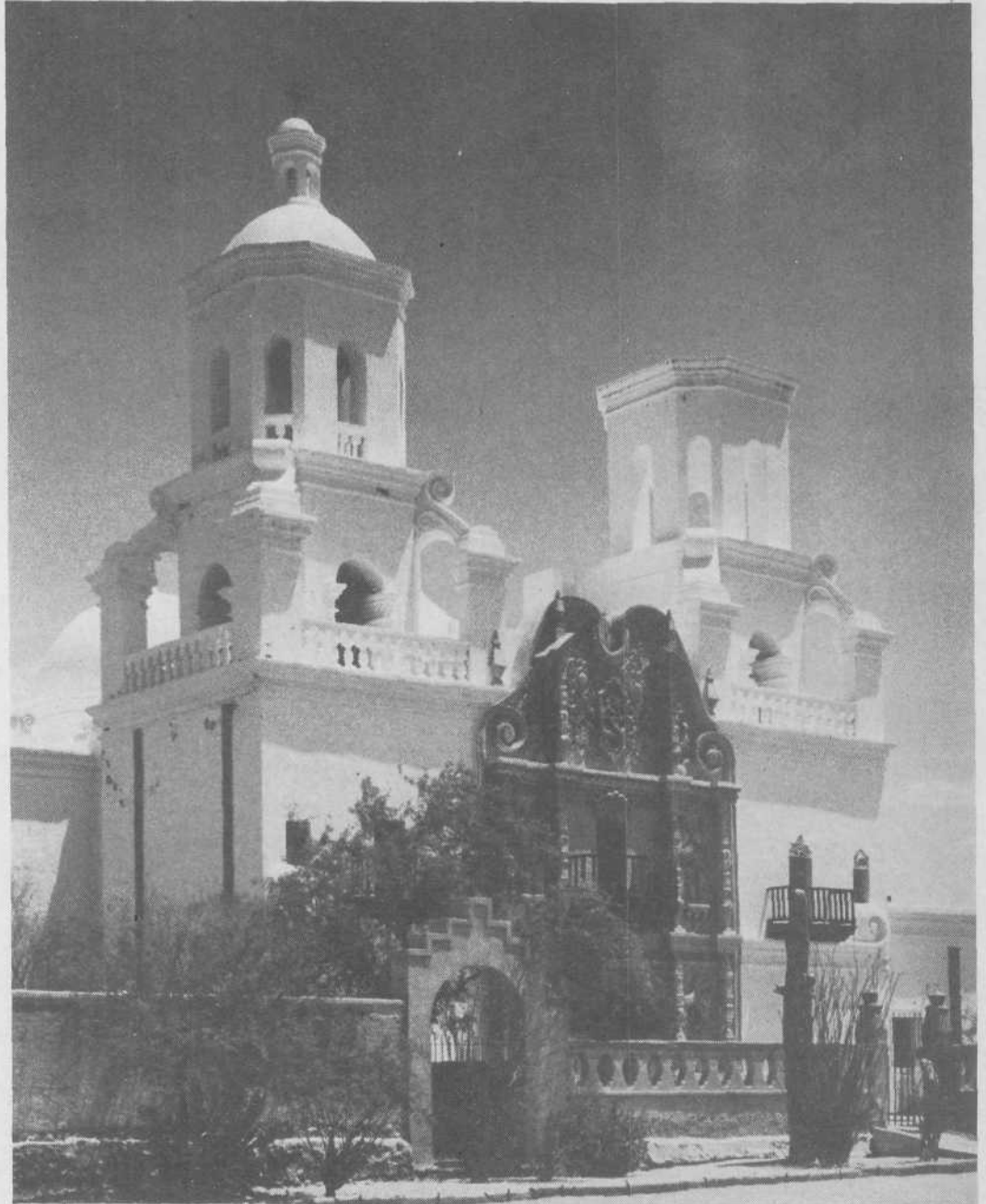
Mission San Xavier del Bac, Arizona

LONG BEFORE any white man had set eyes upon southern Arizona's Santa Cruz River, the Piman-speaking Sobaipuri Indians had built a farming village there. They called the place Bac, the "place where the water appears."

During the century and a half between 1536 and 1687 the northern frontier of New Spain knew many explorers, but no permanent European residents. It was in 1536 that Cabeza de Vaca arrived in Mexico following a six-year trek across the North American continent from Florida. At Mexico City he told amazing tales of the Seven Golden Cities of Cibola in the north. Within a decade the Spanish had launched a number of explorations, including one which included more than 1,000 men and was led by Francisco de Coronado. Each left the heartland of New Spain seeking the fabled treasures of Cibola. Each returned financially poorer for the journey. So it went for 150 years. Explorers came, explorers saw the land, and explorers went home telling tales of a dry, hot desert and no wealth.

In 1687, a man came to stay. His name was Eusebio Francisco Kino. Father Kino was a Jesuit priest.

For nearly a quarter century Father Kino was both the spiritual and political leader of the rugged area the Spaniards called Pimeria Alta. During the first six years he was the only European in the area, and



during the 24 years between 1687 and 1711 he explored a large portion of what is now the American Southwest and Northern Mexico. In that period he founded 29 missions and established 73 smaller churches. During Kino's life all were served by a maximum of 10 priests.

The Mission San Xavier del Bac church which we see today was completed in 1797 by the Franciscans. Jesuit Father Eusebio Kino established the first mission church on the site in 1700. The Jesuits were expelled from all Spanish lands in 1767. The architecture of the present church is Moorish and Byzantine blended smoothly with that of the Spanish Renaissance. The entire structure is a series of domes and arches with wood used only in window and door frames. Photographs by Howard Neal.

In 1692 Father Kino first visited the Indian village of Bac. Eight years later he laid the foundations for the mission church and named it San Xavier in honor of his chosen patron saint. It was the third church that Kino had established in what is now the United States.

San Xavier was a jewel in the Kino chain of missions and is certainly the crown jewel among the missions in the American Southwest.

The present mission structure at San Xavier is considered by many experts to be one of the finest examples of mission architecture in the United States. The building is the third of the mission churches to be built at Bac and was completed by the Franciscans in the period between the years 1783 and 1797. The architecture is a combination of Moorish and Byzantine, blended to create a graceful yet startling structure.

Little is known of the two churches that preceded the present building. It is known that Father Kino built a church. Its exact location is unknown to this day. It is also known that, in the period following 1756, Father Alonso Espinosa built another church. Its location is equally elusive. It is known that in 1767 the Apaches attacked San Xavier and completely sacked the mission. Perhaps that fact gives a clue to the fate of the Espinosa mission buildings.

Little is also known about the actual construction of the present church buildings. There were debates among experts for years regarding the actual construction period, although that has now been confirmed. Yet, the architect is still unknown, as are the reasons why one of the church towers

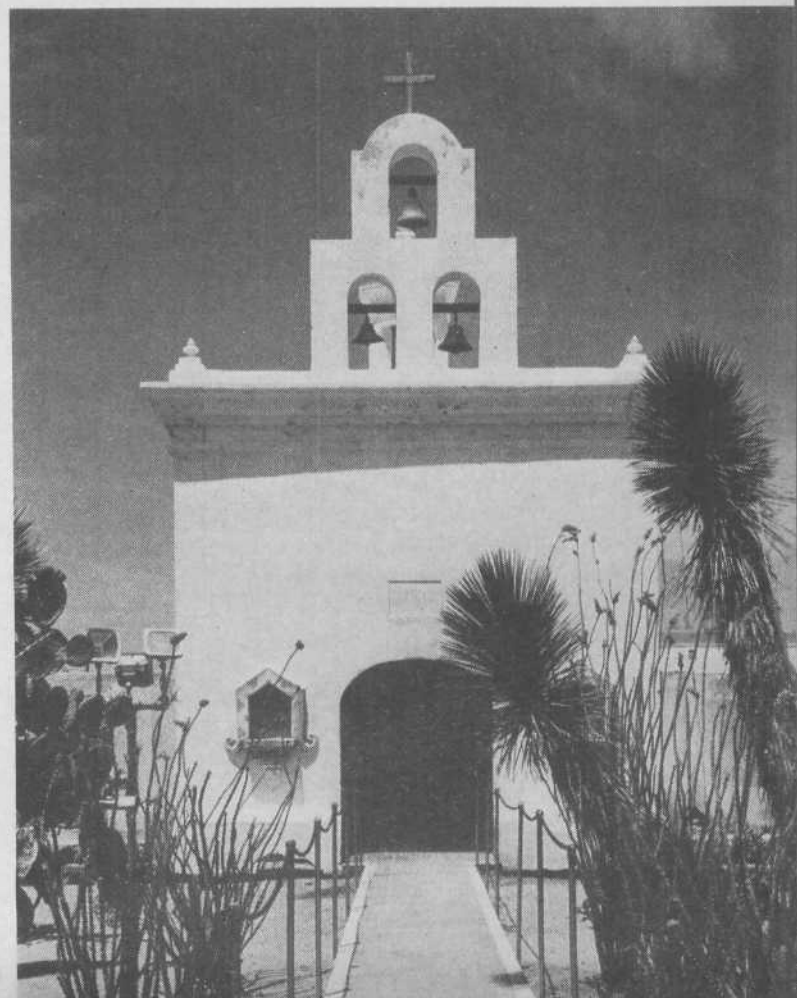
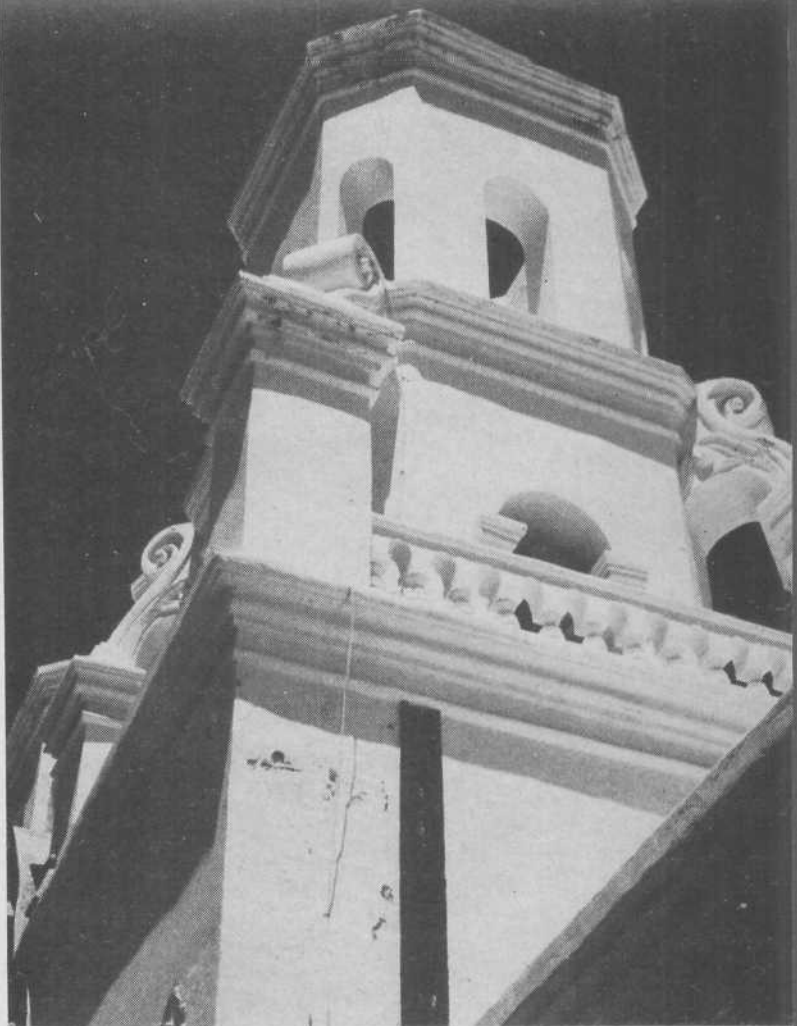
Right: one of the two church bell towers was apparently never completed. One legend tells us that a priest [or a worker . . . or a church architect] fell into the tower during construction and was killed. As a gesture to the deceased the tower remained unfinished. Another story indicates that, since no tax could be levied by the Spanish king until a building was complete, the church was deliberately left unfinished to avoid taxes to be imposed by the crown.

Below: The San Xavier del Bac mortuary chapel, adjacent to the mission church, was completed in 1796. It is not known how many people were buried in the church cemetery, which is now a cactus garden. Only a headstone remains. It is that of a Mexican land grantee whose lands were surrounded by the San Xavier [Papago] Indian Reservation. The chapel was severely damaged by an earthquake in 1887. That quake destroyed many of the mission walls and damaged the facade of the mission church.

was apparently never completed.

So, Mission San Xavier del Bac provides the present day visitor with mystery as well as beauty. There are, indeed, riddles to ponder, history to be absorbed, and majesty to be beheld at this place, the site of one of America's oldest Desert Ghosts.

Mission San Xavier del Bac is located on San Xavier Road, immediately west of Interstate Highway 19, nine miles south of Tucson, Arizona. □



NO. 10 IN A SERIES ON CALIFORNIA PALM OASES

Mopah Spring and its clustered palms nestle near foot of volcanic Mopah Peak in the Turtle Mountains. Pencil sketch by author.



Mopah Spring

by DICK BLOOMQUIST

THE MYSTERIOUS Turtle Mountains rise within a vast tract of desert wilderness in the eastern Mojave. Measuring 60 miles east and west by up to 55 miles north and south, this far-spreading expanse of over one and one-half million acres contains no towns, no paved roads, virtually no permanent inhabitants; its lands are for the most part public domain. Many other mountain ranges, with names like "Old Woman," "Sacramento," "Piute," "Sheephole," "Iron," and "Ship," also raise rugged crests within the region.

The volcanic Turtles, named for the desert tortoise, hold many treasures for explorers of the arid lands: jagged peaks and natural arches, hidden waterholes, old Indian glyphs and trails, and the lore of the Lost Arch Mine; for mineral collectors there are chalcedony roses, geodes, agate, jasper, opals and sard. All this, set amid the unblemished grandeur of the desert, with its spaciousness and silence, its varied plant and animal life.

On the east side of the Turtles stands Mopah Peak, the eroded plug of an ancient volcano. At its feet lies Mopah Spring, with its clear water and five

bajada before arriving at the ruins of a stone cabin. The Bureau of Land Management has closed the Turtle Mountains to motor vehicles at a point slightly beyond the cabin ruins. It is now necessary to hike the final three miles to the palms (see mileage log).

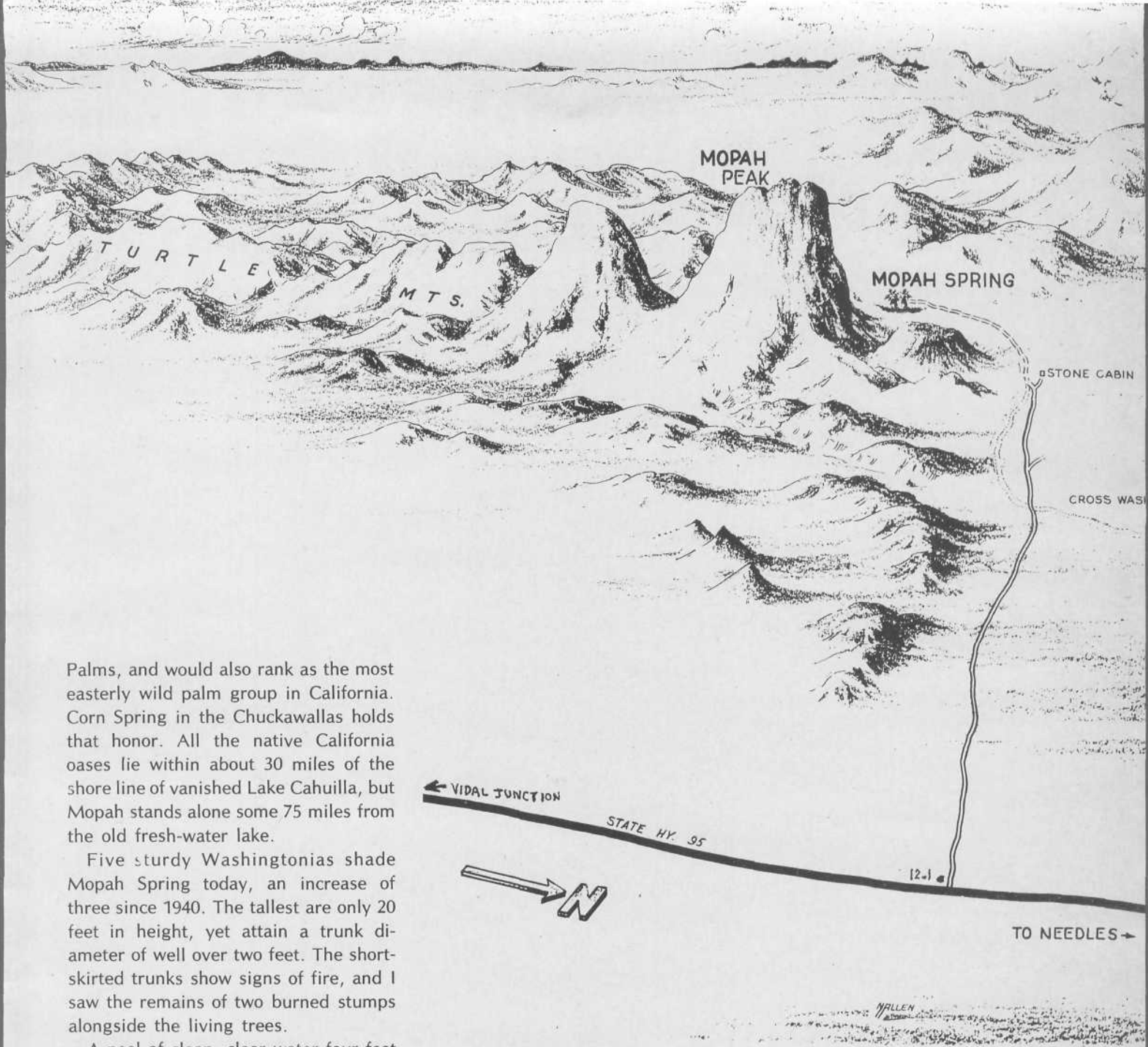
A fraction of a mile before road's end, the palms come into view. The road soon forks, the left branch halting abruptly on a steep slope. The right fork ends around the next bend a short distance below the waterhole. I was surprised to find a prospector camped by a clump of palo verdes. We exchanged greetings and he told me of his plan to search for gold along a nearby fault line.

Mopah Spring has the lure of a classic desert oasis despite the fact that its *Washingtonias* are not native. Old-timers have stated that no palms grew by the spring late in the 19th century. The trees were evidently planted, perhaps by prospectors. Were Mopah a native palm oasis, it would be the most northerly in North America, replacing Twentynine

Mileage Log

- 0.0 Vidal Junction at intersection of Aqueduct Road and U.S. Highway 95 in southeastern San Bernardino County. Drive north toward Needles on Highway 95.
- 12.1 Turn left (west) toward Turtle Mountains on unmarked dirt road.
- 16.1 Cross Wash.
- 17.2 Junction. Ruins of stone cabin to right. Bureau of Land Management has closed Turtle Mountains to motor vehicles slightly beyond this point. Park near ruins and hike up left fork of road into wash. Distance from end of vehicle travel to Mopah Spring is three miles. Elevation at oasis 2240 feet.

small palms. An unimproved road leads to the oasis, branching west from Highway 95 12 miles north of Vidal Junction. For five miles this winding track can be driven in a passenger car as it climbs the



Palms, and would also rank as the most easterly wild palm group in California. Corn Spring in the Chuckawallas holds that honor. All the native California oases lie within about 30 miles of the shore line of vanished Lake Cahuilla, but Mopah stands alone some 75 miles from the old fresh-water lake.

Five sturdy *Washingtonias* shade Mopah Spring today, an increase of three since 1940. The tallest are only 20 feet in height, yet attain a trunk diameter of well over two feet. The short-skirted trunks show signs of fire, and I saw the remains of two burned stumps alongside the living trees.

A pool of clean, clear water four feet across and 10 or 11 inches deep lies at the very foot of the palms. It's a perfect desert spring. Many a waterhole has been covered over or polluted by man, or its moisture has been piped away for use elsewhere, but Mopah abides in natural simplicity. Wildlife, of course, makes use of the water. The Chemehuevi Indians, whose glyphs and dim trails still survive in this country, knew the oasis well, as did the old-time burro prospectors. "Mopah," in fact, contains the Shoshonean word for water (*pah*), which is found in many other Mojave and Great Basin place names. There is a second pool down in the wash a few paces from the palms.

The oasis is located slightly above the

level of the arroyo with its growth of mesquite and palo verde. All around, the Turtles lift their red, buff and yellow ramparts. Dominating the landscape is sheer Mopah Peak, over 3500 feet high. This is the more northerly of the twin Mopah Peaks; the other, less than a mile away, is slightly higher. Together they mark the northern end of a spur of the Turtles known as the Mopah Range. Chalcedony roses and geodes may be found on the east side of this volcanic crag as well as on some of the other ridges.

A tale of the Mopah Peaks concerns a Chemehuevi Indian pursued by soldiers during the latter part of the last century

for a crime he had committed. He took refuge on the higher pinnacle until persuaded by members of the tribe to surrender.

While I was resting at the spring, the prospector mentioned earlier came up to get water. Although I could not agree with his talk of an "Aztec smelter" behind the waterhole or of a "road for wheeled vehicles" which he said the Indians had built into the Turtles centuries ago from Arizona, I could still admire the simplicity of his way of life as he filled up his jugs. It's good to know there are places like Mopah Spring, where palms and water have blended to fashion unspoiled oases in the desert. □

THE DEVIL'S

A ROCK-FILLED BOX CANYON WITHIN TWO HOURS

FEW TRAVELERS passing through Pearblossom, California on State Highway 138, notice the green highway marker at Longview Road (131st Street) indicating "Devil's Punchbowl—8 miles." Having passed the sign many times, I finally succumbed to my growing curiosity and turned down the road one day last Spring. Soon, I was peering over the edge of a huge natural amphitheater, two miles across and 300 feet deep, spellbound by the fascinating rock formations.

The scene reminded me of Utah's Bryce Canyon, yet it lies within two hours of any point in the Los Angeles area. Like Bryce Canyon, the scale of the Punchbowl is not so overwhelming as, say, the Grand Canyon in Arizona. And, also like Bryce Canyon, the setting consists of a box canyon filled with enormous rock formations, exquisitely forged and sculptured by millions of years of erosion, weathering and fault stress, set against an alpine background, overlooking magnificent desert panoramas. The rocks are buff-colored sandstone slabs standing on edge in rows, rather than limestone spires as in Bryce Canyon, reaching heights of 300 feet above the canyon floor and thicknesses of 50 feet.

Fault stress and erosion are largely responsible for the Punchbowl's appearance. The area is splintered by rifts, including two of the Earth's major faults, the San Andreas and the San Jacinto, which run parallel in rare proximity at the Punchbowl, flanking it on the north and south, respectively, about three miles apart.

The Punchbowl sandstone was deposited about 25 million years ago during the Miocene Epoch on the geologic timetable. It was washed down from higher ground on the south, filling a shallow basin. Over a period of a million years, movement along the various faults in the region raised the terrain to the south forming the San Gabriel Mountains and folded the Punchbowl sediments into grotesque shapes. Simultaneously,



ously, streams rushing down from the nearby mountains eroded away most of the Punchbowl sandstone and buried the remainder under new sediments. The streams then began to remove the newer deposits, again exposing the Punchbowl formation and subjecting it to renewed erosion. This entire process continues to the present day.

The finishing touches to the Punchbowl are the work of weathering. Embedded in the sandstone are stones and clay which are eventually worked loose by the action of wind, rain and frost,

leaving small depressions in the sandstone. Moisture collecting in these depressions speeds the breakdown of the surrounding sandstone and the holes grow larger. The results are the many "potholes" dotting the cliffs, frequently used by hawks, owls and other birds for nesting sites.

Sitting astride the complex of faults that produced the San Gabriel Mountains, the Punchbowl now lies in a transition zone between the desert and the mountains. The result is a delightful mixture of desert and mountain plant

PUNCHBOWL

OURS DRIVING TIME FROM LOS ANGELES AREA



by
**EDWIN D.
ANTHONY**

*Part of the
lower Punchbowl
outcropping seen
from below.*

and animal communities among the massive sandstone blocks. Variation in altitude and availability of water largely determine the distribution of plants in the area, and since there are great differences in both factors within the region, very distinct communities of plants may be seen in close proximity.

Traveling south from Pearblossom on Longview Road, you leave a plain, 3,000 feet in elevation, with few large plants of any kind, and gradually gain altitude. The road enters low hills about one and one-half miles south of Highway 138,

where Joshua trees grow in the arroyo bottoms. About one-half mile farther on, the road meets Ft. Tejon Road. Turning left there, the route follows Ft. Tejon Road for about one-half mile before turning right onto Longview Road again. The grade steepens and there are good stands of Joshua trees, increasingly interspersed with juniper. There is good reason for the increased grade: About a mile from Ft. Tejon Road the route crosses the San Andreas Rift zone, the main force uplifting the adjacent mountains. About two miles from Ft. Tejon

Road, turn left at Tumbleweed Road and follow it for three miles to Devil's Punchbowl County Regional Park. Along Tumbleweed Road the grade becomes quite steep. The Joshua trees thin out and the first glimpses of the Punchbowl outcroppings are seen. Eventually, the Joshua trees are left behind and pinyon pine, scrub oak and manzanita prevail, with desert chapparal undergrowth, while tall pine and fir trees cloak the mountainsides above.

The parking lot at the park is 4,700 feet above sea level and the view of the lower Punchbowl outcroppings with the desert beyond, and 1,700 feet below, is superb. But don't assume you see it all from the parking lot and drive away, as park employees told me many have done. The main, or upper, formation rests on the bottom of an amphitheater and cannot be seen from the parking lot. It is only a few steps to the visitor center, located on the rim of the canyon, commanding an imposing view of the main formation.

Devil's Punchbowl is a hiker's paradise. There are numerous developed trails of varying lengths and degrees of difficulty. The two most frequently used are a one-third-mile-long loop directly in front of the visitor center, and a mile-long loop trail descending to the floor of the canyon and back. The first, called "Pinyon Pathway," is a self-guided nature trail. Numbered posts along the trail correspond to entries in a leaflet identifying natural phenomena. Pinyon Pathway is an easy walk involving no climbing.

The mile-long loop trail descends the 300 vertical feet down the canyon wall to Punchbowl Creek and ascends again, ending in the picnic area behind the visitor center. It provides opportunity to see the major attractions in the Park at close range. Leaving pinyon pine and scrub oak at the canyon rim, it descends through thickets of manzanita, with lizards scurrying for cover at every switchback, to a radically contrasting

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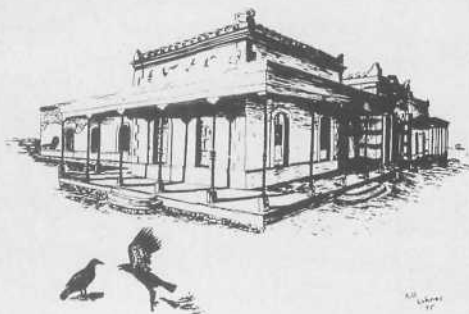
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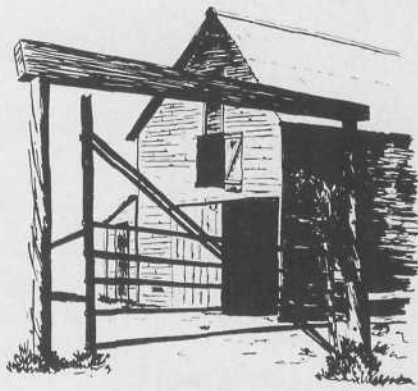
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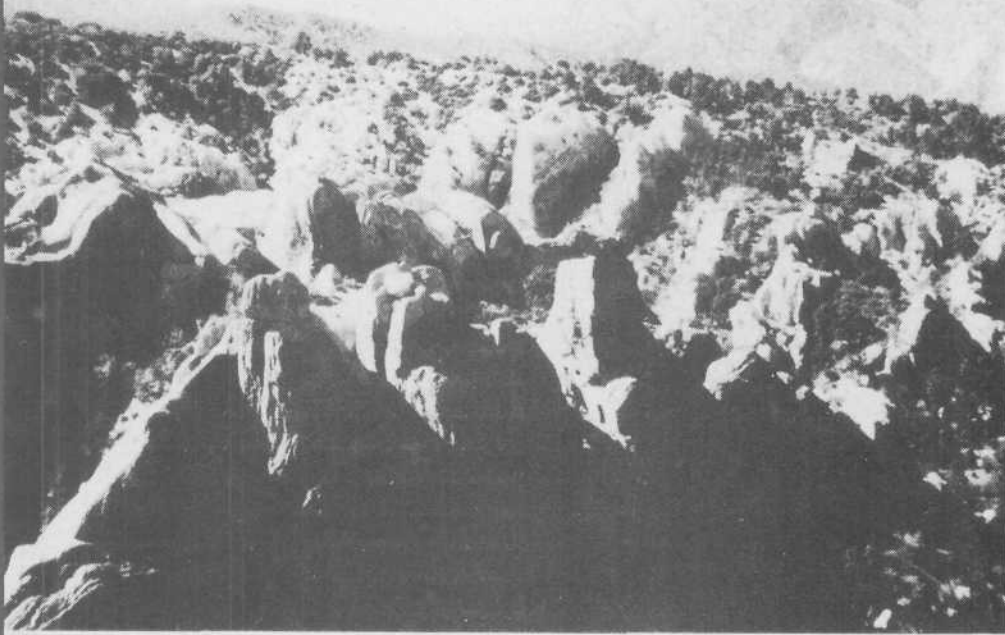
realm along the stream bed. Here, at the base of the towering sandstone cliffs, water-loving deciduous trees dominate, including alders, cottonwoods and sycamores, their leaves turning bright colors each Fall. After following the creek for a short distance, the trail begins its steep climb back up to the canyon rim. This trail is much more strenuous than Pinyon Pathway, and the more habitually sedentary may experience sore leg muscles for a few days after taking it.

Several species of birds, reptiles and rodents are commonly seen in the park, including jays, ravens, hawks, lizards, chipmunks and ground squirrels. The larger animals known to live there are seldom seen because they tend to be nocturnal or shy by nature. These include deer, cougar, bobcat, fox, coyote and rattlesnake. Fossil evidence reportedly indicates that more exotic animals inhabited the area during Miocene times, including a three-toed horse and a primitive camel.

Much later, Indians, probably Seranos for the most part, are believed to have occasionally taken refuge in the Punchbowl. However, signs of their presence have been far fewer than in the Vasquez Rocks area 20 miles to the west. This is puzzling because water and game are more plentiful at the Punchbowl. Both were inaccessible and would have furnished protection from enemies equally well.

There were some attempts at homesteading in the vicinity of the Punchbowl, but it was a spare existence and most were eventually abandoned. As late as the 1940s, life was still primitive, with no electricity, telephones or running water. Access was by way of an old dirt road which washed out after rainstorms. To reach the Punchbowl itself meant a strenuous three-mile hike, making it accessible only to the healthy and strong.

The 1,310 acres encompassed by the park were surveyed, acquired and developed by Los Angeles County over a 13-year period beginning in 1949. The park was opened to the public in 1963. Facilities are simple, but adequate and well-maintained, and there is no admission fee. The access road and parking lot are paved. The visitor center, though small, seems to serve well. It has good displays depicting the geology and wild-life of the area. The small picnic area is



Front view of the main Punchbowl formation from the canyon rim. The San Gabriel Mountains are in the background.

shaded by pine trees. There is no camping in the park, but South Fork and Sycamore Flats campgrounds are nearby. A trail about four miles long connects South Fork with the Punchbowl via the "Devil's Chair" formation and makes a good hike with spectacular scenery.

Devil's Punchbowl makes an excellent family weekend trip. It is accessible, inexpensive, uncrowded and there is plenty for all to do: Hiking, picnicking, animal watching, photography or just

enjoying the scenery. The Punchbowl is a nature reserve and collecting rocks or specimens of any kind is prohibited. The park is open all year and although the climate is generally moderate, it can get hot in the summer and cold in the winter. It is said to be at its best following a snowstorm, when snow-covered trees and mountains frame the rock formations, creating a truly breathtaking scene. But whenever you go, you will find it rewarding and worthwhile. □

Visitors from Minnesota take the mile-long loop trail to the canyon bottom and back.



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WESTERN HOGNOSE

A creature who

OF THE many kinds of snakes that grace the Southwest scenery, a certain fat-bodied number with a turned-up nose has probably caused more furrowed brows among biologists than maybe any two others put together. This is none other than *Heterodon nasicus*, the western hognose snake.

The main reason for all this scientific concern has been his wild and woolly actions when cornered and unable to escape. The theatrical performance he puts on at such a time has behaviorists trying to figure out why exactly he does it and physiologists trying to figure out what's going on inside him while he's at it.

It goes something like this: faced with inescapable trouble, he goes into his Big

Threat Act, a spectacular display of venomous bad temper that has earned him the names of Puff Adder, Sand Viper and Death Adder. What with the dark pattern on his back and his generally stout body, he looks close enough like the massasauga rattler as it is, and when he goes all out with the theatricals, he's downright wicked looking. Flattening his body, he spreads his neck out sideways by extending his front ribs and a hood, almost cobra-like, rises suddenly at his head. His color patterns flash brighter and more striking as the skin between the scales spreads, and his light-colored lips outline the sides of his mouth. Sound effects are next on the program as he fills his lungs and begins a savage hissing. He may pull his head back under a

loop of his body, and raise his tail. Poised and taut as a coiled springs, he's ready to strike.

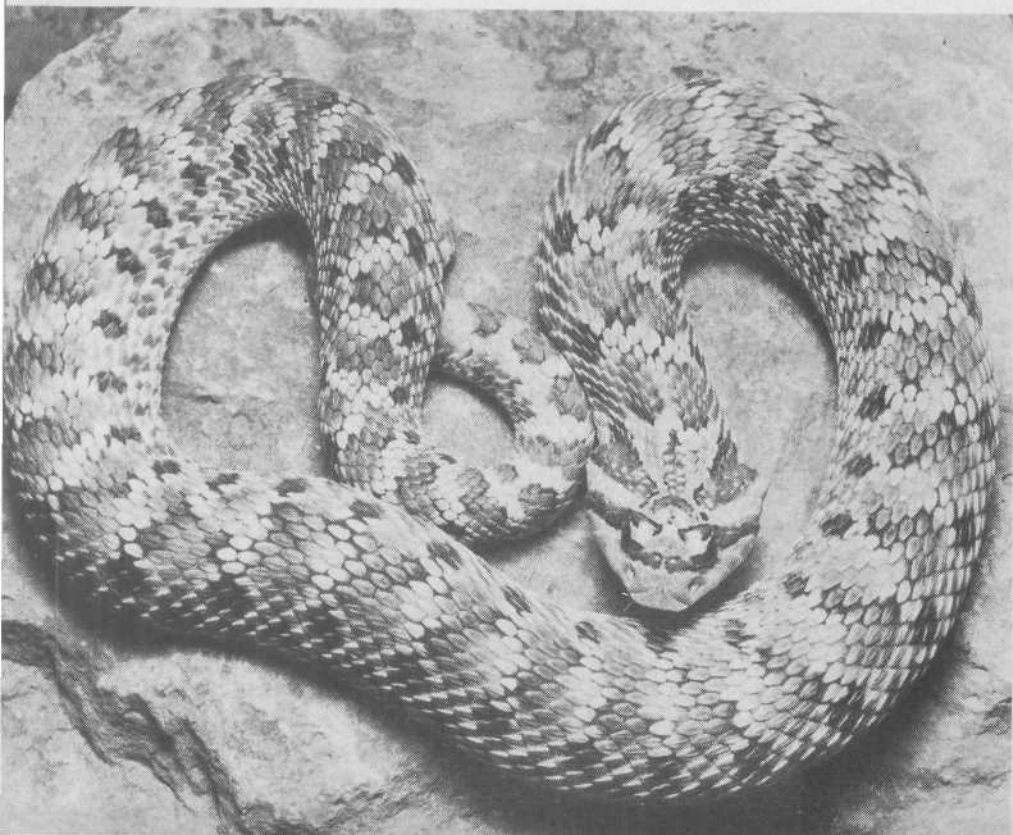
At this point, at the very height of his fearsome display of ferocity, the hognose starts a vigorous writhing and contorting. Then, suddenly he goes limp, flopping over onto his back. Belly up, mouth agape, he looks very, very dead. If poked over right side up once more, he instantly flops belly up again, looking, if possible, even deader than before. In a few minutes, if all seems quiet, the corpse raises a cautious head. Seeing that the coast is clear, the erstwhile deceased rights himself in a twinkling and departs hastily.

Such serpentine histrionics are puzzling enough in themselves, but even more so since this fellow is of such an easygoing disposition and not given to biting. Thus, for years he has been dubbed a big faker, a bluffer, a bag of wind, a harmless phoney.

But here comes the clincher in the puzzler: he isn't.

In fact, recent anatomical work has shown that old *Heterodon* is indeed venomous, albeit only mildly so. Furthermore, anatomists, looking at his poison equipment and regarding certain muscular features and other obscure points here and there that they like to compare, suggest that the hognoses have certain affinities with rattlesnakes and with the

Left: The Western Hognose with head and body flattened in its "bluffing" pose. Right: This scaly performer plays a most convincing "dead" act. Upper right: A close-up showing his digging shovel-type snout. Caution—this is a venomous snake and should be handled only by experts.



SNAKE

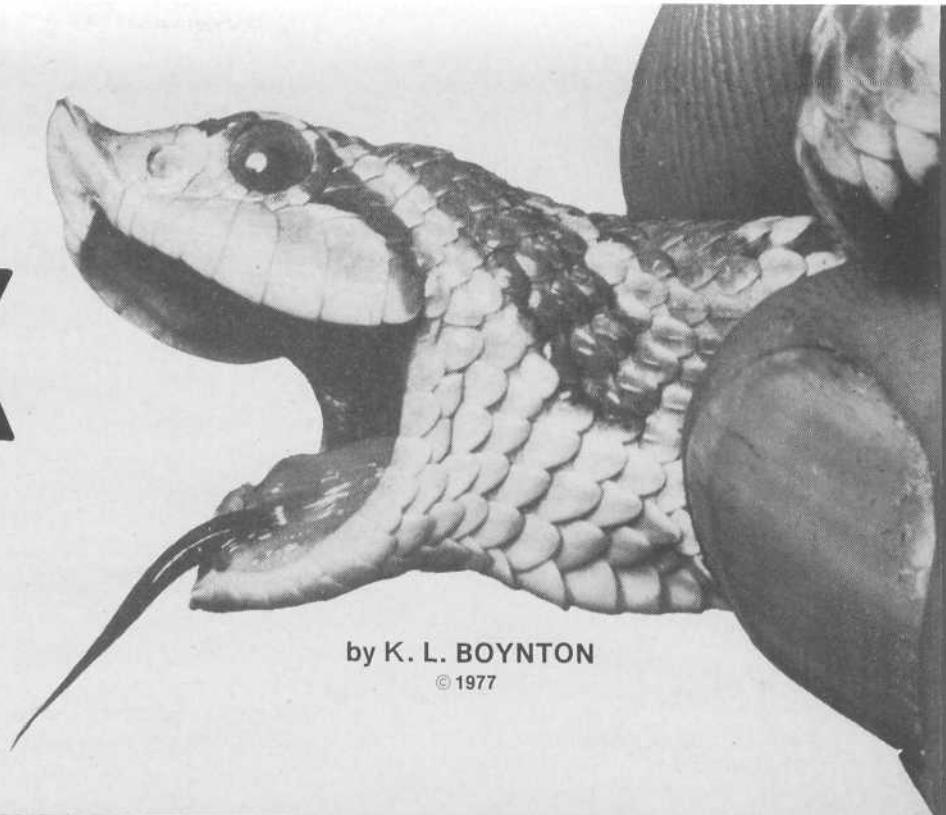
likes to play dead!

Viperidae. And this latter family—with such sample members as old world desert puff adders, the Gaboon viper and the horned viper—is as poisonous a lot as can be found anywhere. To be sure hognose venom doesn't have anything like the kick theirs do, but *Heterodon* has venom just the same.

So here is a strange thing: a snake with fangs and venom that could be used in self defense, but who employs bluster and show instead and finally even pretends to be dead. A mild-mannered fellow, the hognose only uses his venom, apparently, to subdue the small prey he eats.

Unlike the fangs of rattlers which are up front, those of the hognose are located in the rear of the mouth. When not in use, they are folded up neatly, pointing backwards towards the throat. Zoologist J. C. Kroll's big study of hognose feeding adaptations, just hot off the press, shows how these teeth are raised and brought forward for action by contraction of muscles which actually move and rotate bones in the roof and foreparts of the snake's mouth. Down-pointing now, the fangs are used to inject the venom to quiet the prey, hold it, and work it along during swallowing. The poison is supplied by seriomucous glands which lie above the fangs and connect with them via ducts. Once the meal is down the hatch, the fangs are pulled back up into resting position.

A slow moving snake, the stout-bodied hognose hunts mainly by smell. Zoologist D. R. Platt watched one prowling along in easy shallow loops at least .15 to .17 mph. Flicking its moist tongue out through the notch at the front of its upper jaw as it went along, it was picking up floating articles in the air and bring-



by K. L. BOYNTON

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ing them into a spot in the roof of its mouth (Jacobson's organ), a nerve-rich region that amplifies the sense of smell. No speed demon, the western hognose can only make about one-half mph at top escape speed, so capture of lizard speedsters and broad jumping toads is mainly done by ambush, or by following their trail to where they are hidden.

As assortment of western toads are on the menu including the spadefoots; frogs, too, particularly the leopard. Since lizards abound in desert regions, a variety of them are eaten: horned lizards, earless lizards, collared, and skinks to mention a few. Eggs of lizards and turtles are dug out and eaten, insects too, and pocket mice. The hognose can handle surprisingly large prey for his size because of his stout body, large head and big gape.

Interested to see how much it took to keep a snake going, Zoologist Platt offered his lab hognose all the toads and lizards they would eat for 59 days. His three small ones (about eight inches long not counting their tails, and weighing some seven grams or so apiece) ate at intervals of about one week, with a mean weight of food per snake of 18.6 grams. A larger hognose (some 12 inches long plus his tail and weighing 28 grams tucked away 40 grams of worth of lizards (seven of them) in 24 days. In the wild, good consumption depends on what's available, the snake's physiological condition and the size of the food item.

In all cases, hognoses are notoriously big eater of toads, and let it be said here that these warty worthies do not become objects de lunch easily. Faced by a hognose that's come for lunch, the toad promptly inflates its lungs and swells up, making a lumpy balloon of itself that is very, very hard to swallow. If the snake is lucky and connects with his fangs, the venom may quiet the victim, but there is still the problem of reducing its size. Interesting enough, even after it was known that hognoses were venomous, it was still thought that those sharp rear fangs were used to puncture the toad and let the air out. But Zoologist Kroll, looking at their length, wondered. He substituted a needle and found that it took a much longer one than the fangs to do it. What really does the deflating trick is the steady strong pressure of the snake's powerful jaws.

Not that deflation is the only problem

in toad eating. It seems that these warty lunch items have poisons of their own—two high-powered secretions produced by their skin glands. One, epinephrine, causes a heart to beat very fast; the other, a digitaloid, slows a heart way down. Either could be fatal to the diner. Why the hognose isn't done in by the consumption of so much of these poisons was a puzzle until Herpetologists Hobart Smith and Fred White pointed to the snake's greatly enlarged adrenal glands which could furnish antidotes for both. The Edgrens, working together on the problem, also suggest that since the hognose has a surprisingly large amount of epinephrine in its own system, it may be less sensitive to it.

With the dining situation pretty well under control, the next problem is housing. For the hognose—like many another arid land dweller—the best solution is a burrow. As far as location is concerned, scrublands and sand areas with open spots for sunning and bushes dotted about for shade and seclusion are just about perfect, as long as the soil is loose enough. *Heterodon* is a digger deluxe and when pushed to it can bury himself completely in a shallow burrow in two minutes. Zoologists marveling at his high speed in digging, looked into his tools, and marveled still further. First of all that turned-up nose of his—besides adding such a flip to his appearance—is a spade of the first order. It's actually a special scale, concave on top with a thin free edge, and when *Heterodon* shoves his face into the ground with powerful thrusts of his arched neck and forebody, the sharp spade cuts the sand and loosens it. Expert head and body motions push the sand sideways and upwards over the snake's back as he digs forward, and in no time at all he's well under. Short and thick, he doesn't need too long a burrow nor does he have a lengthy tail to haul in afterwards. Hence the speedy disappearing act.

No spade, however good, goes anywhere without power, and Anatomist D. Davis checking for this found that those driving thrusts come from remarkably big muscles located up front on the snake's back and sides, characteristic of the hognose tribe. Anatomist W. G. Weaver, watching a hognose breaking into drier and harder soil, was astonished at the force of the blows, and wondered how in the world a snake's skull, light

and delicate as skulls go, could stand it. And what he found upon investigation was a remarkable arrangement of the bones into an extra strong framework for the shove. Furthermore, the bones of the nose itself were lengthened and expanded and fused to make the front end more rigid, thus preventing its turning as the snake drives its shovel into the earth. Mechanical modifications, muscular power and built-in know how combine to make, as zoologists put it, one swell digger.

Besides providing a home and protection against cold and heat, the burrow, in the case of Mrs. Hognose, is a place for egg deposit at the proper season. Individual snakes have several burrows in their home range. Deeper ones may be used for weeks or months, shallow ones only temporarily as they can be dug quickly anywhere. The hognose likes the daytime to be out and doing, temperatures of say 86 to 97 F. with sunshine being fine, and they get about a home range of some 259 feet for the males and 307 for the females, as Platt's field work indicated. There's always one with different ideas of course, one lady's range covering some 1,875 feet.

Hognoses hibernate during the cold season, not in aggregations as some species do, but in individual burrows well below the frost line. This might pose a problem come spring, but what with the proximity of home ranges, gentlemen with courting on their minds do not have to travel far to find courtesies. They're out earlier in the spring, anyhow, looking.

The males mature at one year. The females at about 20 to 22 months, and Platt's study suggests they may breed only in alternate years. March, April and May are the big months. Mrs. H. digs a rather shallow underground nest and deposits the eggs, which are elliptical in shape, white and smooth with thin papery shells. Fresh laid, they are about 14 mm by 20 mm in size, increasing in width and weight during incubation but only slightly in length. Incubation time depends on the temperature of the ground, running some 52 to 61 days at 80 F., but taking maybe 89 at 70.

Zoologist D. F. Munro reporting on Texas hognoses watched the hatching procedure. The snakelet inside makes a number of slits in the shell with its "egg tooth," a temporary sharp projection on

the front of its upper jaw. Fluid leaks out of the egg and nothing happens for quite awhile. After a few hours the snakelet extends his head through the opening but may not make his grand entrance into the world until 60 hours later. Only about seven inches long at this stage and weighing only six grams, he's pretty vulnerable. And yet, Platt found that even the fresh out little westerners in his lab knew how to stage the hognose family's Defense Act.

Which brings everybody back to the Big Puzzle. Why do hognoses do this?

Behaviorists speculate. Such a show may allow more snakes to survive. Time may be gained for a chance to bolt and escape. Certainly the horrible appearance could deter the more faint hearted predators. Head concealing may help protect this most vulnerable part, the tail up offers a less valuable target. Or, a coiled snake with its head hidden might confuse a predator, making it unsure and more cautious.

Playing dead belly up might fool some predators into moving away and letting the snake alone. The light belly itself might be repelling. Or, is this a hangover from the old in-the-water days when a dead snake floats belly up? Whatever it is, it doesn't always do the desert *Heterodon* much good, as Swainson's hawks are not impressed and catch them anyhow, nor would it save them from a stamping by a mule deer or other big grazing animal.

Physiologically, the "dead snake" hasn't fainted, or isn't in shock. Its senses are alert, but its usual responses are inhibited. Death feigning, as zoologist Platt and others conclude, is primarily a nervous response, a part of a defensive behavior pattern.

Interesting to report, death feigning is much more developed in the eastern hognoses, and probably more effective against their forest-type enemies. Evolutionists believe that the two lines diverged early. The western branch, dwelling in arid lands subject to long drouth evolved a smaller form with slower growth, fewer offspring, but a better survival rate probably due to more effective burrowing tools and skills.

So will the old death feigning trick already of less value to the western type finally become degenerate and be lost to *Heterodon nasicus* repertoire?

It's a puzzle! □

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Picacho's Lost Arch Gold

by HAROLD O. WEIGHT

THE FAMOUS Lost Arch of the lost mine hunters is supposed to be in the Turtle Mountains, some hundred air-miles north of Picacho peak. But Picacho has its lost arch and its little pool and golden nuggets, too.

Placer gold occurs at least in small amounts in almost every wash in the Picacho country, and in every direction out from the great peak. No one knows when the first gold was winnowed there, but it is of record that miners have been prospecting and working those gravels for more than a hundred years. I believe at least another century must be added to that. Some of the richest locations—like Oven Wash, which was first placered in 1862 and in which \$70 nuggets were found—have been worked and reworked four and more times.

This Lost Arch placer field (or it may be just a placer pocket) was discovered a few miles south or southeasterly from Picacho peak in the early 1930s. Possibly for inexpensive entertainment in those Great Depression days, a group of young people (number and names not remembered) drove out from Winterhaven planning to hike to Picacho peak, explore around it and possibly climb it. At that time the Picacho road was often ex-

tremely bad and sometimes impassable. On this day the young people did not even make it across the summit between No Name and Picacho washes. Leaving their car on the Winterhaven side of the summit they started to hike for the peak, still miles away across rough country.

On present-day maps you will probably find No Name Wash labeled Unnamed Wash. Perhaps the difference seems subtle. But in the past someone *did* give this wash a name: No Name. That's what the oldtimers called it, and that's what they meant. And if now you label it Unnamed Wash (with capitals) you have in fact given it a name and therefore you can't label it Unnamed.

Well . . .

Then there's the problem of two entirely separate washes named Picacho. One, originating southwest of Picacho peak, separates the Chocolate and Cargo Muchacho mountains and drains southeast. The other, east of Picacho peak, is the more familiar one which the Picacho road follows and which drains north to the river. This is the Picacho Wash near which the group parked their car.

"They didn't realize it was such a long way through there," Ed Rochester said, "and they didn't get too far. But they did

reach a place where there was a waterhole—a pothole—with a ledge which formed a low natural bridge over it. And one of the girls sat on this arch, dangling her feet in the water, while another member of the party took a photograph of her.

"And while she was resting her feet there, she looked down and saw bright pebbles in the water in the pothole. She brought some home. They turned out to be gold.

"Of course, they went back then, and searched and searched. They couldn't find the arch and the pool again."

They told the story to G. A. Rodenbaugh, long time Winterhaven postmaster. They showed him the gold. They gave him a copy of the photograph of the girl and the pool. "Rody," who had a partiality for lost mines and an interest in mining, probably looked for that golden pool more than once. It was 10 or 15 years later when Ed and his partner, Earl Kerr, first heard of the story from Rodenbaugh.

"Rody just knew the gold was there," Ed said. "He loaned us a copy of the photograph. And it was authentic. It showed the girl, the pool, the rock bridge, and the cliffs around.

"Earl was a great hiker in those days. He decided he would locate that Lost Arch. And he finally did find a place that

looked like it—that corresponded to the photograph. There was the rock basin, a pothole. There were the cliffs. But the arch was gone. It had fallen.

"And there wasn't any gold.

Earl had taken a picture of the place he had found. The background looked identical with that of the other photograph. Ed accepted Earl's conviction that he had found the Lost Arch, and the matter was more or less forgotten.

"But here's the funny part," Ed went on. "Quite a while later—after Earl was gone—I had occasion to go into the studio of a photographer named Brumley, in Yuma. He had died, but his wife was there. While I was waiting, I looked at the pictures on display. You know, just looking around. And here was a scenic shot of the exact same spot the first photograph had shown. It showed the arch, it showed the water, and it showed the cliffs. Only the girl was missing."

Ed "got a little excited," and asked Mrs. Brumley about it.

"Yes," she said, "my husband made that picture out at Picacho. We were there, just on an outing."

"Do you think you can find that place again?" Ed asked.

"Oh no," said Mrs. Brumley. "I didn't go with him. We parked by the road and he hiked in."

Ed shook his head, telling me about it. "He had to have taken the picture at the same identical spot, and it must have been taken about the same time. Why couldn't those kids find it again?"

Ed took it for granted the photographer made the picture about the same time the nuggets were found, probably because the place looked so much the same. But I wish he had asked. It might have helped determine whether or not Earl actually found the Lost Arch.

That is a question which continues to trouble me. There are lots of potholes and cliffs in the Picacho country, and more than one arch, too. And a lot of that rough volcanic country looks dangerously alike. I have been temporarily lost in there simply because one canyon, with its twists and turns, can scarcely be distinguished from the next. And the puzzle about Earl's story was the absence of any gold. Yes, the arch could have fallen, and the waterhole be dry, but what happened to the nuggets?

So I asked: "Is it possible Earl could have been mistaken? That the place looked the same, but wasn't?"

"Well—of course I was never there," Ed admitted. "Never saw it. But Earl said it was the same. He had a picture. It looked the same." □

Next Month:

"Picacho's Lost Badger Hole Gold."

*Opposite Page:
The great massif of
Picacho peak, visible
throughout most of the
Picacho country, is
the heart of a
legend-haunted land.
Right: Ed Rochester
and Lucile Weight check
a possible gold prospect
near No Name Wash.*



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GHOSTS OF THE GLORY TRAIL by Nell Murbarger. A pioneer of the ghost town explorers and writers, Miss Murbarger's followers will be glad to know this book is once again in print. First published in 1956, it is now in its seventh edition. The fast-moving chronicle is a result of personal interviews of old-timers who are no longer here to tell their tales. Hardcover, illustrated, 291 pages, \$7.00.

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After crisscrossing the wash of the Amargosa River for 20 miles we reach the dry plains of the Amargosa Desert. In front of the Jeep is the well-deteriorated T&T Railroad bed.

RETRACING THE T&T

Continued from Page 27

wood cable railroad still ascends from the townsite to the marble quarry 1000 feet upon Bare Mountain.

From 1914 to 1916 the marble quarry and the town of Carrara boomed. The town grew to over 40 buildings with a large hotel and three newspapers. However, most memorable was the 18-foot fountain that graced the central plaza and ostentatiously sprayed precious water into the dry desert air. Such extravagance did not last long as the demand for real marble fell with the advent of cheaper artificial marble tile. By 1917 the quarry and the town had completely folded.

From Carrara to Beatty the T&T and the LV&T paralleled each other. When the LV&T ceased operations in 1918 the Nevada Department of Highway purchased its entire right-of-way for less than \$4,000. The roadbed was widened

and opened for vehicular traffic. If he had been alive in 1919 Borax Smith would have smiled broadly at the cars on new Highway 95 as he rode his train into Beatty on his still operating T&T.

However, Smith was not smiling when the golden T&T spike was driven on October 30, 1907. The LV&T had arrived over a year earlier and had continued on to Goldfield, 70 miles to the north. Even though Clark's LV&T was averaging \$55,000 a month and showing profit, the outlook appeared bleak for both railroads. The panic of 1907 had shackled the entire country. The glitter of the mining boom had begun to tarnish. The established bonanzas at Goldfield and Tonopah were petering out and the fabulous gold fields of Death Valley were not quite so fabulous.

Borax Smith recognized that he had been dealt a losing hand; nevertheless, he would remain in the game if for no other reason than to seek revenge on his despised rival, Senator Clark. Smith undercut LV&T's fares, reducing the Beatty to Los Angeles ticket from \$20.75 to \$16.25. The T&T-Santa Fe route to Los Angeles was shorter and faster than the LV&T-Union Pacific route. Smith made the most of this fact to wrestle away much of the LV&T's business including the U.S. mail service. Smith made sure that his antagonist would never see another profitable day.

By 1910 the T&T was handling the bulk of the freight tonnage and twice the passenger traffic as the LV&T. During the next seven years the LV&T's re-

venues continued to dwindle until they approximated only \$8,000 per month. Finally in 1918 Clark swallowed his pride and suspended operations.

During the years that it competed with LV&T, the T&T never turned a profit. After the demise of the LV&T the T&T did not fare much better. The depression of the 30s hit the line especially hard. All major mining activity in Death Valley ceased including the profitable borax operations which had supported the T&T for 25 years. With them went the people, the towns and the hope. On June 14, 1940 Borax Smith's T&T Railroad ceased operation.

At 11:22 A.M. on the fourth day of our journey we cross the city limit of Beatty. The odometer registers 242 dusty, bumpy miles. The Jeep suffers from a broken axle, torn linkage and minor contusions. Happily we can only complain of a few bruises and a sprained knee garnered in our derailment. We agree that the original two-day, 170 mile T&T ride from Ludlow to Beatty must have been smoother and a lot less trying.

Although by all financial standards the T&T was a flop during its 33-year existence, it managed to outlive Senator Clark's LV&T by 22 years. To Borax Smith that alone would have been sufficient justification to construct a railroad through one of the harshest environments in the world. To us it was sufficient justification to retrace the blood, sweat and the vengeance with a final ride on the Tonopah & Tidewater Railroad line. □



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More on the Tortoise . . .

The extent of the response to my article about the desert tortoise in the February issue of *Desert* has been extremely gratifying to both me and the Committee I represent, and I wish to thank everyone who took the trouble to write, either to me directly, to the Committee or to this page of the magazine.

Since the publication of the article, some events have taken place which have impelled me to update it a little bit. However, before I do that, I would like to emphasize a point to which I gave only minor reference in the article. PLEASE—do not, or allow your children to, put paint on a tortoise! This is a tragic error, for after all, the shell is a living part of the animal, and who knows what harmful chemicals may penetrate it? If you want to mark it for identification, a tiny dot or something in the middle of one of the "tiles," preferably in water-soluble poster paint, but NO paint should ever touch the growth rings. Actually, the best way to mark it is with the license tag!

Now, first the good news. Through the efforts of the Bureau of Land Management, with a grant from the federal government, the fence around the Desert Tortoise Preserve (or Natural Area, as it is now called) has now been completed, except for some minor alterations, and the contract for the brochures, nature trails, interpretive display structures, etc., is nearing completion. However, our fund-raising drive continues, because there is still the monumental task of acquiring the privately owned land parcels within the area.

Now for the bad news. There seems to be a widespread misconception about the purpose of the Preserve. Evidently many people believe that it is intended to be a place to release their unwanted pets. Unfortunately, this is not the case, and it is not because of any arbitrary ruling on the part of human beings; but rather, the nature of the animals themselves. And pets ARE being found in the Preserve, many of them covered with paint!

Outside of its educational purposes, the Desert Tortoise Natural Area is just that—a natural area designed to protect that great concentration of the species which happens to be living there from all but the natural enemies in the vicinity, and thereby to insure the survival of the species. To introduce unwanted pets into the area would help neither the pets nor the native population. As I said in the article, the pets are too spoiled and compla-

cent to survive on their own, and are generally confronted with a choice of a slow death by starvation or a quick one from some predator more alert than they are. Whereas, the results to the native creatures would be overcrowding, disease (runny noses, etc., which can be highly contagious and often fatal), and a general upsetting of their social structure which has been confirmed by scientific observation over the years.

So let me repeat: If you no longer want your pet or can no longer handle it for any reason, either turn it over to your local game warden or find a good home for it with someone you can trust, with a reminder to write to the Fish and Game Department in Sacramento—or wherever, in a state other than California—for free license tags or pertinent information. And once more, for more information about the desert tortoise or the Preserve, feel free to write to the Desert Tortoise Preserve Committee, Inc., P. O. Box 453, Ridgecrest, California 93555.

GLORIA NOWAK,
Ridgecrest, California.

Author and Editor All Wet . . .

In your June 1977 issue, both Bill Jennings and William Knyvett refer to last fall's tropical storm as "Katrina," however, the correct name was "Kathleen." Tropical storm "Katrina" was responsible for the damage to San Felipe in the fall of 1967.

DENNIS AND IRMA FEELEY,
Chula Vista, California.

Editor's Note: To err is human, but to call a lady by the wrong name is indeed inviting a storm!

Reader Has Well Trained Eye . . .

After reading Bill Jennings's article, "The Impossible Railroad," I hiked the gorge and found a number of captions are incorrect.

The photo at the bottom of page 26 was taken 11 miles west of Dos Cabezas between tunnels 6 and 8 (number 7 is abandoned.) The photo on page 46 is nowhere near the east entrance. Its location is about 100 feet behind the photographer of the photo on the bottom of page 26.

The train in the photo on the bottom of page 27 is eastbound. Since the tracks never change sides of the gorge, the gorge is always on the engineer's left when heading east.

DAVID BLACK,
San Diego, California.

One for you, David Black, or maybe more. The damage photos were supplied by the Southern Pacific and the author committed a technical error by not personally examining the area in question. Regarding the seeming left-handed caption for the passenger train pictures, actually, the pictures are not of the same train, which nobody but me has noted yet! I believe the lower photo has been "flopped" or reversed, anyway, but I don't have the negatives to check. The secret to the two pictures is that the top one shows a five-car train headed by Engine No. 27 and the lower one shows a four-car train, perhaps headed by the same engine, one of a series of four once owned by the Las Vegas & Tonopah, built by Baldwin in 1907. Bill Jennings.

Calendar of Events

This column is a public service and there is no charge for listing your event or meeting—so take advantage of the space by sending in your announcement. We must receive the information at least three months prior to the event.

SEPTEMBER 10 & 11, Santa Maria Gem and Mineral Society's 7th annual "Gemboree." Convention Center, Santa Barbara County Fairgrounds, Santa Maria, Calif. Dealer space filled. Parking and admission free. Chairman: Billy Joyal, 1617 N. Lynne Dr., Santa Maria, California 93435.

SEPTEMBER 10 & 11, Antique Barbed Wire and Collectable Show, sponsored by the California BWCA, Home Economics Building, Stanislaus County Fairgrounds, Turlock, CA. Free admission. Write to: Delbert Haarberg, 15562 El Capitan Way, Delhi, Calif. 95315.

SEPTEMBER 17 & 18, Gem and Mineral Show, "The Show That Shows How," presented by the Mother Lode Mineralites of Auburn, Calif. Free admission. Fairgrounds, Auburn, California.

SEPTEMBER 17 & 18, Annual Bottle Show and Sale presented by San Bernardino County Historical Bottle and Collectible Club, San Bernardino Convention Center, 303 North "E" Street, San Bernardino, Calif. Adults 50 cents donation. Call: 714-889-4264.

SEPTEMBER 17 & 18, Sequoia Gem & Mineral Society's 11th Annual "Harvest of Gems & Minerals" Show, Redwood City Recreation Center, 1328 Roosevelt Ave., Redwood City, Calif. Dealers, demonstrations, displays. Dealer space filled.

SEPTEMBER 24 & 25, 11th annual "Magic in Rocks" show hosted by El Monte Gem and Mineral Club, Inc., El Monte Masonic Temple, 4017 N. Tyler Ave., El Monte, California. Free admission and parking.

SEPTEMBER 24 & 25, Carmel Valley Gem and Mineral Society's 18th Annual Show, "Jubilee of Jewels." Monterey County Fairgrounds, Monterey, Calif. Dealers, demonstrations. Parking free.

SEPTEMBER 24 & 25, "Harvest of Gems" show sponsored by the Centinela Valley Gem and Mineral Club, Hawthorne Memorial Center, El Segundo Blvd., and Prairie Ave., Hawthorne, Calif. Dealers, displays, demonstrations. Ample free parking. Chairman: Don C. Johnson, (213) 377-1674.

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